SYSTEM MANUAL

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MASTER CONTROL LINK® 2

Rev.#1 3/90

Bang&Olufsen

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G L O S S A R Y O F T E R M S

Aux Link-The term for the connection which takes place between a Bang & Olufsen audio system and video system. See section 6 for further details.

AV Link-The term for the connection which takes place between a Bang & Olufsen television and video recorder. See section 6 for further details.

Beocenter-A Bang & Olufsen audio component with receiver, tape recorder, CD player or turntable in one cabinet.

Beocord-A Bang & Olufsen audio or video tape recorder

Beogram-A Bang & Olufsen turntable or CD player

Beolink-The term which describes the ability of Bang & Olufsen audio and video products to be operated in an integrated fashion by the Beolink 1000 remote terminal.

Beomaster-A Bang & Olufsen audio receiver, which contains the micro-computer circuitry for operating the audio system.

Beovision-A Bang & Olufsen television set.

Central room-Also called "main room". The room in which the main Bang & Olufsen audio system or audio/video system is located. Sound and pictures are always distributed from the central room to the local rooms.

Device-Any peripheral video component (computer, decoder, game, etc.) which is connected to a Bang & Olufsen video system via RF or AV inputs.

Datalink-The term which describes the two-way digital communication system between Bang & Olufsen products.

DIN plug-A European plug which has been designed according to the "Deutsche Industrie Norm". DIN plugs and sockets are used in all Bang & Olufsen products.

Infrared sensor-An accessory for the Beomaster 5500 which allows the Beomaster to be concealed while retaining full remote control capability. See section 9 for further details.

Local Room-Also called "link room" Any room in which a Master Control Link system has been installed.

Local Source-A Bang & Olufsen audio or video component which is placed in a local room and connected to a MCL 2AV

Master Control Link (MCL)-The term which describes the ability to distribute and control sound and pictures from multiple locations in the home.

G L O S S A R Y O F T E R M S

Master Control Link Cable-A special 7 conductor cable which runs from the Central room audio system to the Master Control Link relay box, or from relay box to relay box. See section 6 for further details. Available unterminated or in pre-made lengths with plugs attached . See section 9 for part numbers.

Master Control Panel (MCP)- A type of remote control which features two way data communication for readout of system status at the user location.

Option Programming-The programming of any Bang & Olufsen product which contains an infrared pickup (Beomaster, Beovision, or MCL transceiver) to process certain remote commands and block other commands. Option programming, accomplished via the Beolink 1000 remote terminal, is necessary due to the multiple connection and placement capabilities of Bang & Olufsen products in the home. See section 5 for further details.

Power Link-The connection between a Beomaster, Beovision, or MCL 2AV and powered loudspeakers or MCL 2P amplifier. Power Link carries left/right preamp signals along with display data, turn-on, and protection signals. See section 6 for further details.

Power Link Cable-A special 8 conductor cable which runs from a Beomaster, Beovision, or MCL 2AV with Power Link sockets to Beolab loudspeakers or the MCL 2P amplifier. See section 6 for further details. Available unterminated or in pre-made lengths with plugs attached . See section 9 for part numbers.

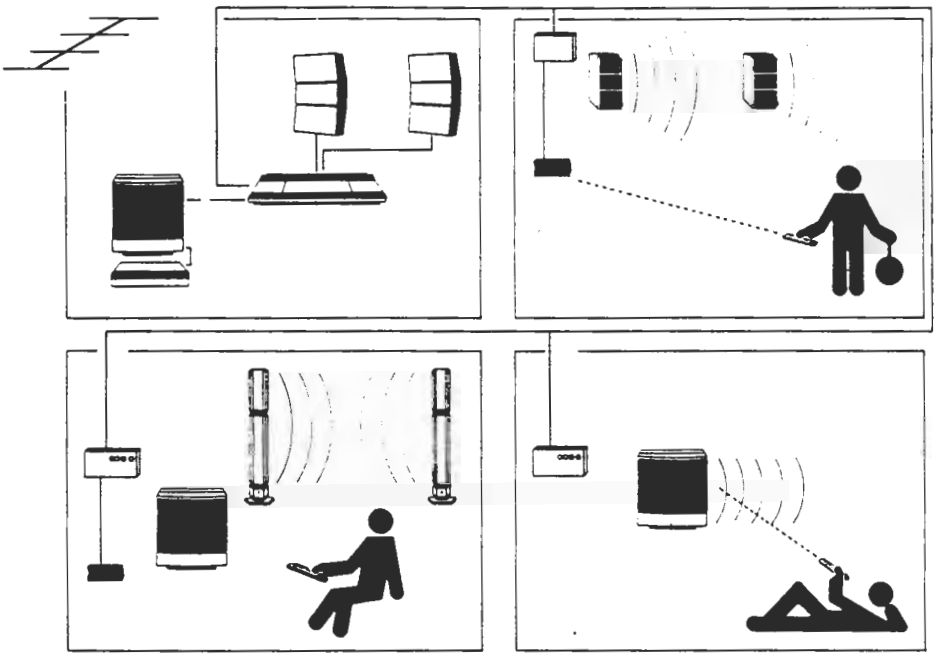
Relay Box-A part of a Master Control Link 2ABLI. The relay box is the connection point for the local room loudspeakers, transceiver, and MCL cable. It contains the speaker muting relay, protection circuit, and power supply for the MCL 2ABLI.

Speaker Link-The connection between the Speaker 1 output of a Beomaster or Beocenter and Beolab series loudspeakers. See section 6 for further details.

Speakers 1-The speaker output on a Beomaster or Beocenter which is used for driving the main room speakers

Speakers 2-The speaker output on a Beomaster or Beocenter which is used for driving the Master Control Link system.

Transceiver-A part of a Master Control Link 2ABLI or 2AV. The transceiver sends and receives infrared signals to and from a Bang & Olufsen remote terminal or Master Control Panel.



INTRODUCTION

The Master Control Link system allows sound and pictures from a Bang & Olufsen main room audio/video system to be distributed to and controlled from any room in the customer's home.

The MCL 2 system consists of 3 products:

MCL 2ABLI -The replacement for the MCL 2A. MCL 2ABLI is designed for basic Master Control Link systems where the customer desires distribution and control of audio sources only.

MCL 2AV (Audio/Video) A new Master Control Link which allows independent volume control, local audio and video sources, and control of Bang & Olufsen audio and video components.

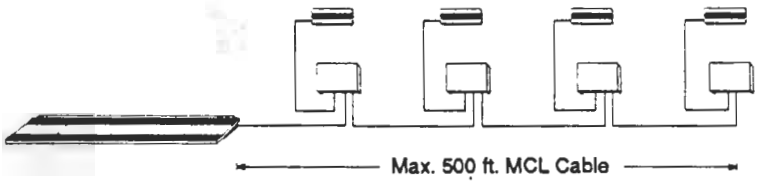
MCL 2P (Power Amplifier) An accessory for the MCL 2AV. MCL 2P is required when passive loudspeakers are used in a local room where independent volume control and local source capability is desired. NOTE: In local rooms where a second MX 5000 tv has been installed, the amplifier of the television set may be used instead of MCL 2P.

This section describes in detail the features of each of these products. If you are not familiar with the products in the MCL 2 family, we suggest you read this section first before attempting installation of a Master Control Link 2 system.

How many MCL units and how much cable?

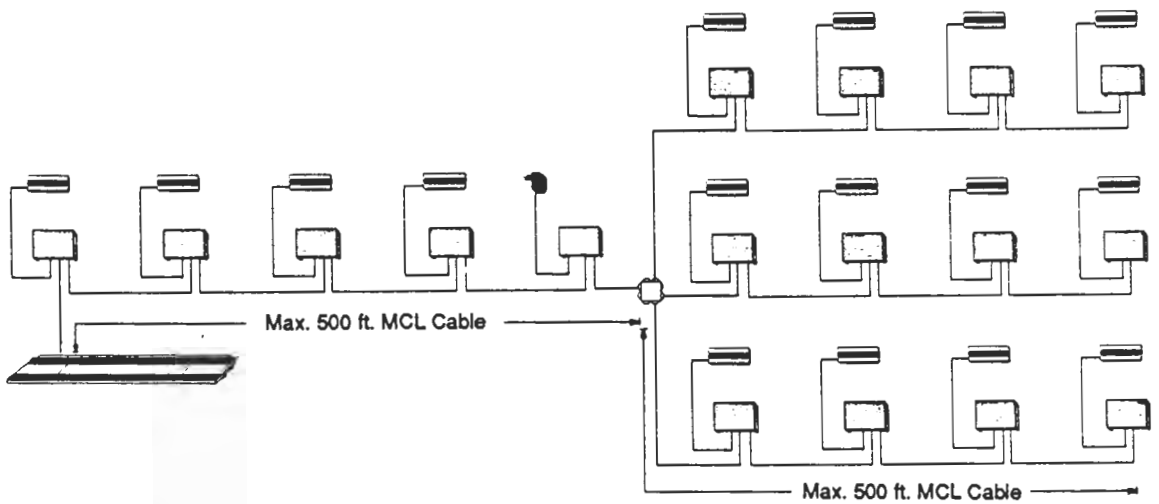
Basic system:

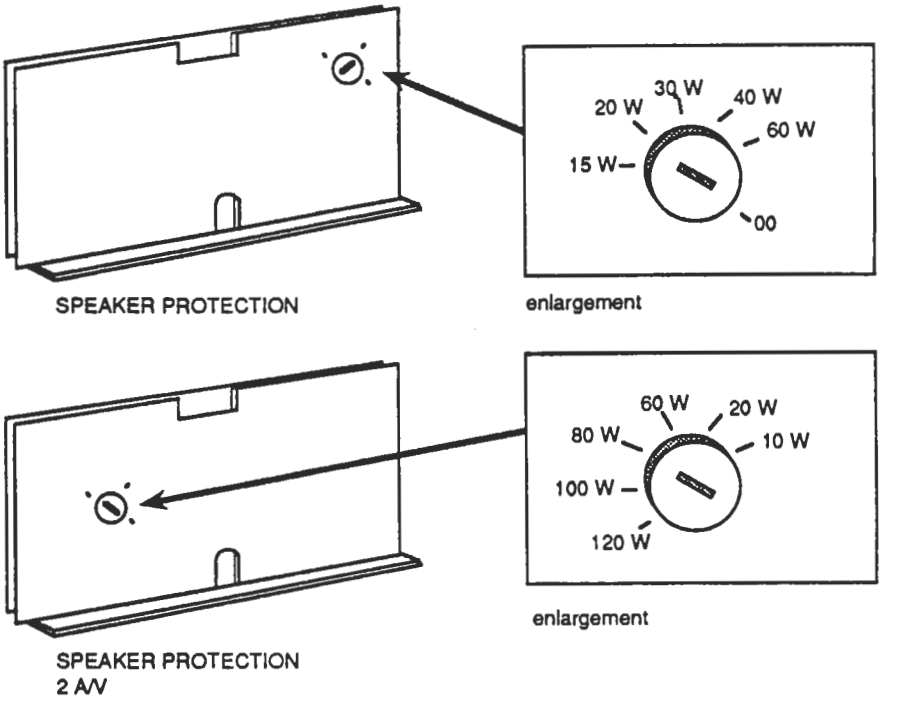
It is possible to connect four MCL 2ABLI or MCL 2AV to the Music system and up to 500 ft. of cable may be used. MCL 2ABLI and MCL 2AV may be combined to a total of 4 Link units.



With MCL 2E expander:

An additional twelve MCL 2ABLI or MCL 2AV may be connected by using an MCL 2E expander. MCL 2ABLI and MCL 2AV may be combined in any order. These 12 Links should be distributed in up to 3 lines with a maximum of 4 Links in each line. The total cable length connected to the MCL 2E expander must not exceed 1500 ft. Thus, a total of 16 Links and 2000 ft. of cable may be used with the audio systems.
The MCL 2E is supplied with an AC power supply. Make sure that provisions for supplying AC power to the MCL 2E have been made.





PROTECTION OF SPEAKERS

Loudspeaker load (MCL 2ABLI or MCL 2AV used as MCL 2ABLI)

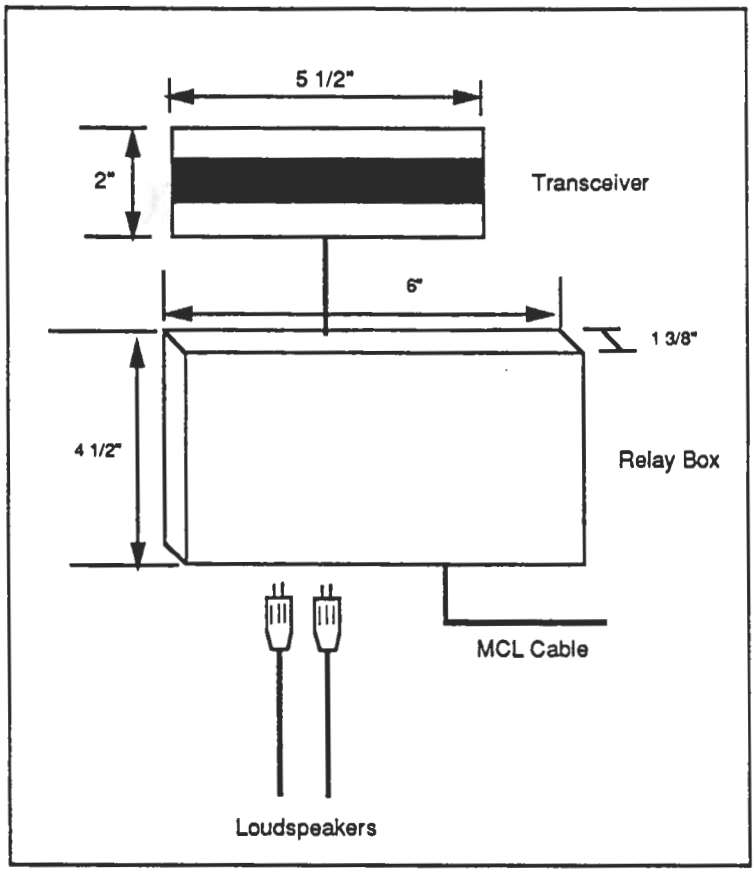
Because the loudspeakers in the local rooms are connected in parallel, there is a limit to the number of rooms which can be on simultaneously, particularly if high sound levels are desired. If too many loudspeaker pairs are on, the audio system's protection circuit (APHC) will go into operation and reduce the volume level, or in severe cases, simply put the system into STANDBY. In installations where high volume levels are desired in certain rooms, the use of MCL 2AV with powered loudspeakers is recommended.

Loudspeaker protection (MCL 2ABLI or MCL 2AV used as MCL 2ABLI)

You may use loudspeakers with less power handling capacity than the amount of power produced by the audio system without risking damage to them.

Inside the relay box there is a control knob (SPEAKER PROTECTION) which should be set to the rated power handling capacity of the loudspeakers. If the volume is increased beyond the set value, an electronic circuit will automatically switch off the speakers in that room only.

This feature also allows determining how loud a volume level is permissable in a given location, e.g. in a teenager's room or on a patio. If, for example, the control is set to 1 watt on the scale, the loudspeakers will cut out when that level is exceeded.



INTRODUCTION

The MCL 2ABLI (BLI stands for Beolink) replaces the MCL 2A and is designed for use with all current Bang & Olufsen audio systems.
As far as dimensions of the components and operation are concerned, the MCL 2A and MCL 2ABLI are identical and interchangeable. However, the MCL 2ABLI transceiver has been upgraded with a new microcomputer. The following features are added: Battery backup of the timer programming mode and option programming of the transceiver (see section 5 for option programming).

The MCL 2ABLI transfers speaker level signals from the speaker 2 output of a main room audio system to speakers in the local room where the MCL has been installed. A speaker mute relay in the MCL relay box is controlled by the microcomputer in the transceiver. This ensures that the speakers in the local room are activated only when the MUTE button on the transceiver is pressed or when a remote control activates the main system from the local room. The speaker relay resets to the "mute" position whenever the main room system has been switched off.

The connecting cable between the transceiver and the relay box is a 3/16" thick cable (16' long). which is hard wired into the transceiver. The other end of the cable has bare wire ends for connection to a terminal strip inside the relay box.

Dimensions:
Transceiver (W x H x D): 5-1/2" x 2" x 7/8"

Transceiver wall cutout
(for flush mounting): 4-5/16 x 1-3/8

Relay box (W x H x D): 6" x 4-1/2" x 1-3/8"

WHAT IS MASTER CONTROL LINK 2AV

Master Control Link 2AV is the newest member of the Master Control Link family. MCL 2AV is supplied with the following items:

Transceiver, type 2021
Socket panel, type 2020
Power supply, type 2023

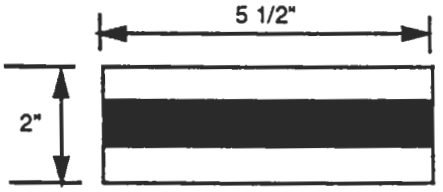
The transceiver is the same one as supplied with MCL 2ABLI, with identical dimensions, mounting requirements and electrical characteristics.

The MCL 2AV socket panel is approximately twice as large as the relay box for MCL 2ABLI, and requires external DC power, supplied either by a small AC adaptor (included) or by the MCL 2P amplifier.

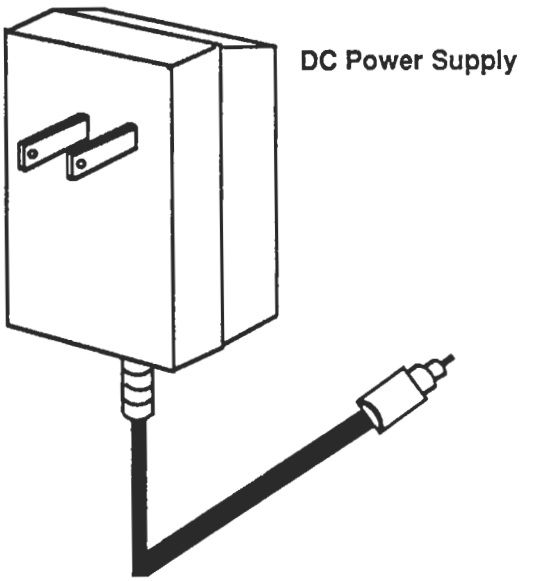
To gain the full benefits of MCL 2AV, it must be connected either to active loudspeakers such as the Beolab Penta or Beolab Panel 3000/5000, or to the optional MCL 2P power amplifier and a pair of passive loudspeakers.
If active loudspeakers or MCL 2P amplifier are not used, MCL 2AV will function in the identical fashion to MCL 2ABLI.

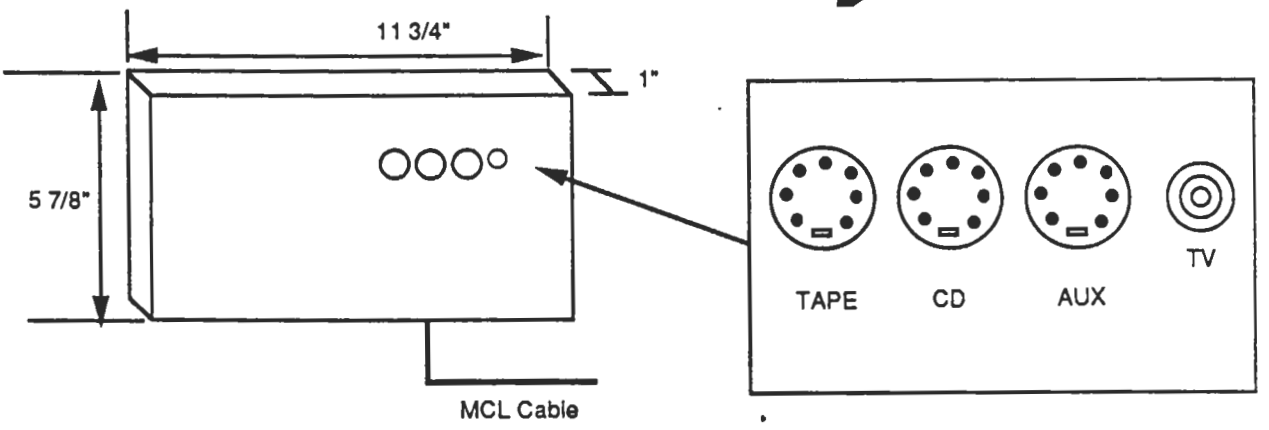
WHAT ARE THE CAPABILITIES OF MCL 2AV .

Master Control Link 2AV provides all of the capabilities of MCL 2ABLI. That is, with the connection of MCL 2AV in a local room, the central room system may be remote controlled via the Beolink 1000 terminal. Sound signals are routed through the MCL 2AV which provides a local muting function. This enables the system to be heard only in the rooms where it is activated, eliminating the need for external speaker switching.



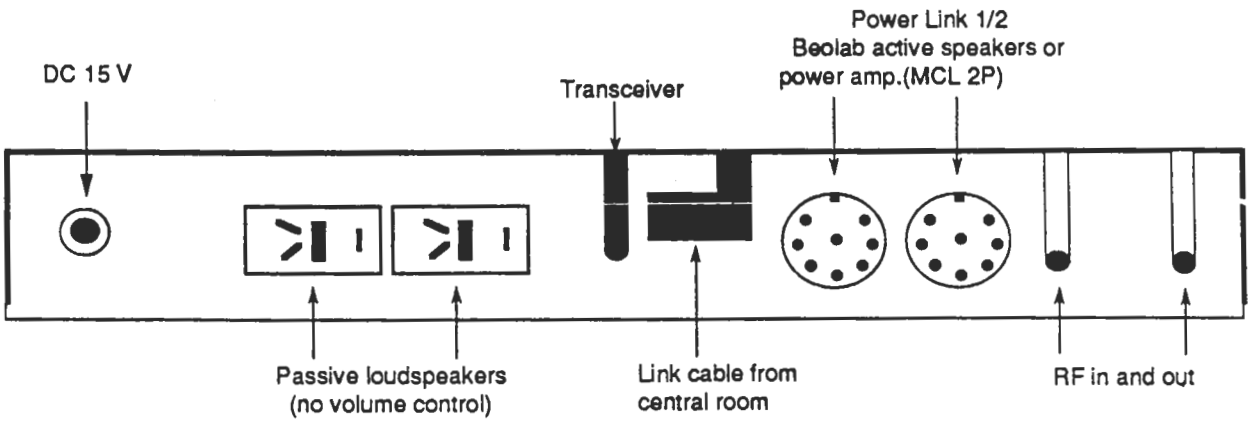
MCL 2AV Transceiver

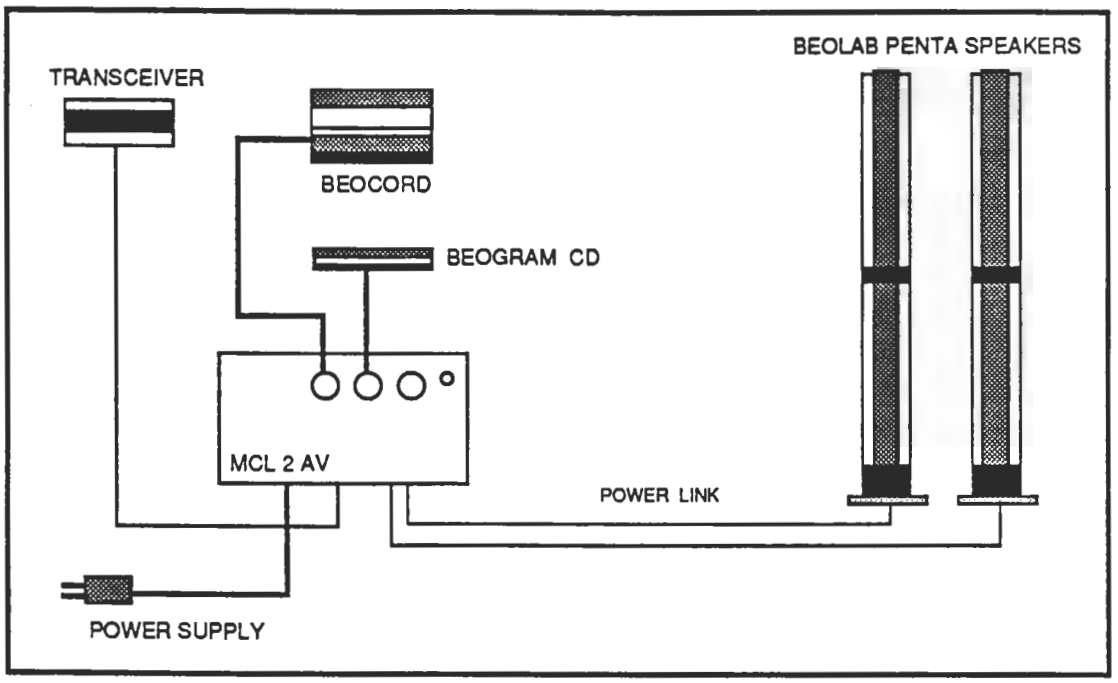




Master Control Link 2AV Relay Box

MCL 2AV BOTTOM VIEW





LOCAL AUDIO SOURCES

Master Control Link 2AV contains two 7 pin DIN inputs for the connection of two local audio sources. These can be any Beocord with datalink connections, or any CD player with datalink connection except the CD 3300. Additionally the Beogram 4500 turntable (with built in phono preamp) may be connected.

Local audio sources are accessed by pressing the appropriate button, e.g. CD on the Beolink 1000 if a local CD player is connected. The MCL 2AV knows that a local audio source has been connected, and selects it automatically. In this case gaining access to the main room CD player requires pressing the the LINK button, then the CD button on the Beolink 1000. If no local room CD player is connected, then only the CD button on the Beolink 1000 must be pressed to gain access to the main room CD player.

Non Bang & Olufsen local audio sources may also be connected to the MCL 2AV. (Bang & Olufsen manufactures adaptors for this purpose. See the accessory list under "Adaptors".) In this case selecting the local source requires the following sequence on the Beolink 1000: SHIFT, RADIO, 6 for the CD input, or SHIFT, RADIO, 7 for the tape input.

MCL 2AV offers the following additional features when used with active Beolab speakers or the MCL 2P amplifier:

•Independent Volume Control.

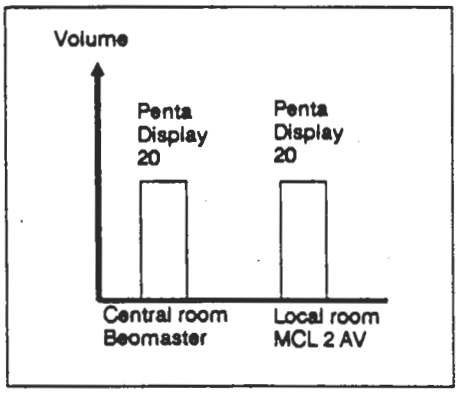
•Connection of up to two local audio sources with full remote control.

•Connection of a second MX 5000 TV with full remote control and Audio/Video integration in the local room.

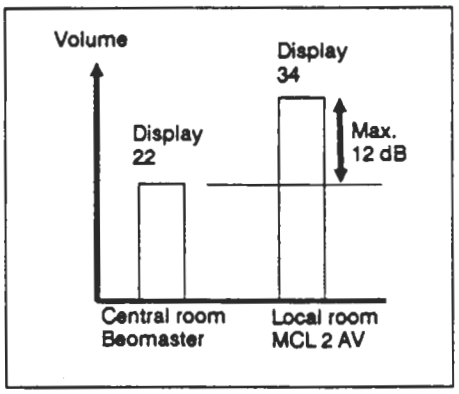
INDEPENDENT VOLUME CONTROL

The MCL 2AV converts the speaker signal from the speaker 2 output of the main room audio system to a line level signal whose level is controlled in the local room by the Beolink 1000 remote terminal. This volume controlled signal is then fed via the power link outputs on the MCL 2AV socket panel to Beolab active loudspeakers or to the MCL 2P power amplifier. When Beolab speakers are connected, their display will indicate the volume level in the local room. The MCL 2AV can be programmed to a preset start up level, in the same way as the main audio system.

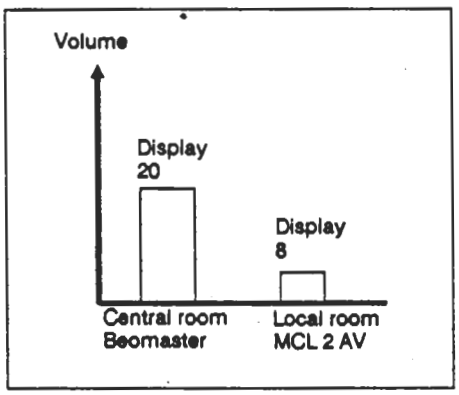
The MCL 2AV independent volume control function requires a mimimum preset start-up level in the main room system. At a point where the local room volume is raised 12dB above the main room volume, the main room volume will be raised as well. To better illustrate the interaction of main room and local room volume levels, let us look at some examples.



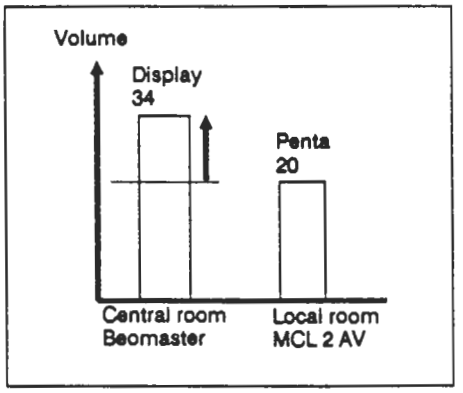
In this example, Beolab Penta loudspeakers are connected to a Beosystem 5500 in the main room and to an MCL 2AV in the local room. The start up volume in both rooms is set to give an indication of 20 on the Beolab Penta displays when the system is switched on from Stand by.



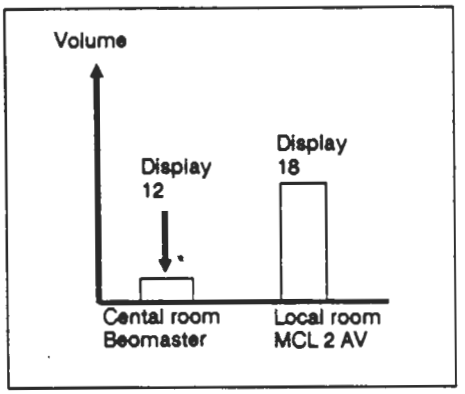
We now increase the volume in the local room using the Beolink 1000 remote. Up to an indicated level of 32 on the local room Penta display, the volume level in the main room will stay at the preset level of 20. If we continue to raise the volume in the local room to 34, the volume level in the main room will increase to 22. If we continue to 36 in the local room, the main room increases to 24, and so on. This means that the we can turn up the level in the local room 12dB above that of the main room before the main room level is affected.



Turning the MCL 2AV down from the starting point of 20 does not affect the main room volume.



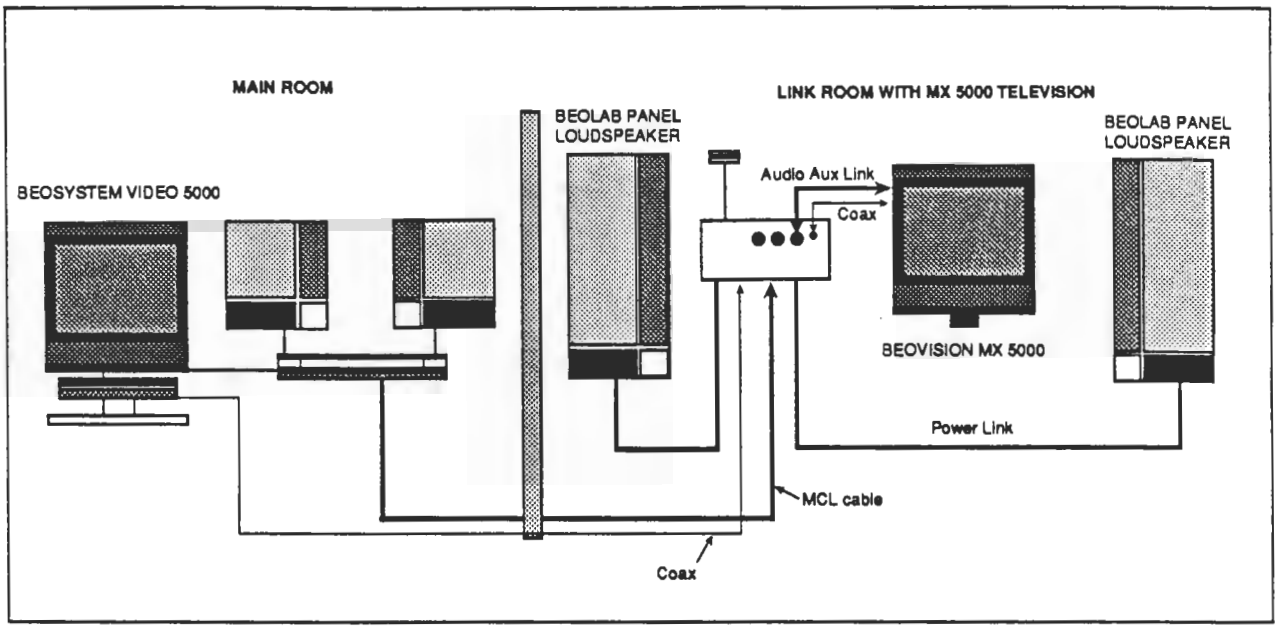
Volume in the main room can be increased without affecting the local room, even when the increase exceeds 12dB.



If the volume in the main room is reduced from the start up level of 20 down to 12 or less, the volume in the local room will begin to follow, to 18 and then below. If the volume in the main room is once again increased, the local room volume will remain at the same level.

How much is 12 dB?

12dB is a substantial difference in volume: it corresponds to increasing the output power by a factor of 16. Here are some examples of the amount the output of the MCL 2AV can be increased without affecting the main room:
From .5 watt to 8 watts.
From 2 watts to 32 watts.
From 4 watts to 64 watts.



Connecting a second Beovision MX 5000 TV

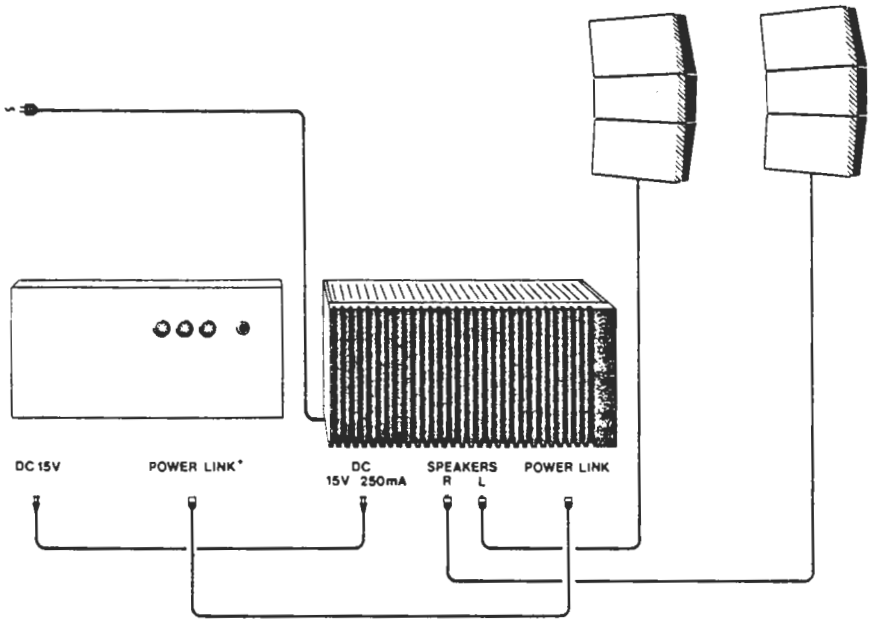
The Master Control Link 2AV allows connection of a MX 5000 tv set via the AUX output of the tv to the AUX input on the front of the MCL 2AV socket panel. Connection of the second MX 5000 tv gives the following benefits.

• The amplifier and loudspeakers of the local room MX 5000 TV reproduce all local and main room audio and audio/video sources with fully independent volume control.

• The sound from the local room TV can be played through the local room active speakers or MCL 2P with passive speakers when these are connected.

• The VX 5000 VCR in the main room video system 5000 can be controlled in the local room through the MCL 2AV. The stereo sound from the main room VCR is transferred to the local room via the MCL 2AV. This can be played through the local room speakers, or through the speakers in the second MX 5000 tv.

• Picture signals from the local room video system are transferred via a separate coaxial cable to the local room. A termination point on the MCL 2AV for the coaxial cable is provided. The coaxial cable from the MCL 2AV to the local room MX 5000 is connected to a socket on the front of the MCL 2AV Alternately, any standard antenna or cable distribution system which has been previously installed in the home may be used for this purpose. A slight modification will be necessary. (See section 3)



WHEN TO USE MCL 2P

The MCL 2P is a high quality stereo power amplifier designed primarily for use with the MCL 2AV when local source capability and independent volume control of passive loudspeakers is desired. However it can be used with any Bang & Olufsen product which contains Power Link output sockets; e.g., the MX 5000 television or Beomaster 4500 receiver.

FEATURES

- MCL 2P has the following features:
- 30 watts/channel RMS power
- Auto turn-on/turn off. Turns on and off with the product to which it is connected.
- Automatic Power Handling Control which automatically turns down the volume when the amplifier has been overloaded.
- 15 volt DC socket for supplying power to the MCL 2AV.

ACCESSORIES

MCL 2P is supplied with a 8ft. Power Link Cable and a 8 ft. DC cable for connection to the MCL 2AV. Mounting hardware for attachment to the wall is also included.

Power Link cables and DC cables may be extended when the MCL 2AV and MCL 2P are separated. See section 4 for installation instructions and section 9 for optional accessories.

INTRODUCTION

This section explains in detail the capabilities of the Bang & Olufsen Beolink system.

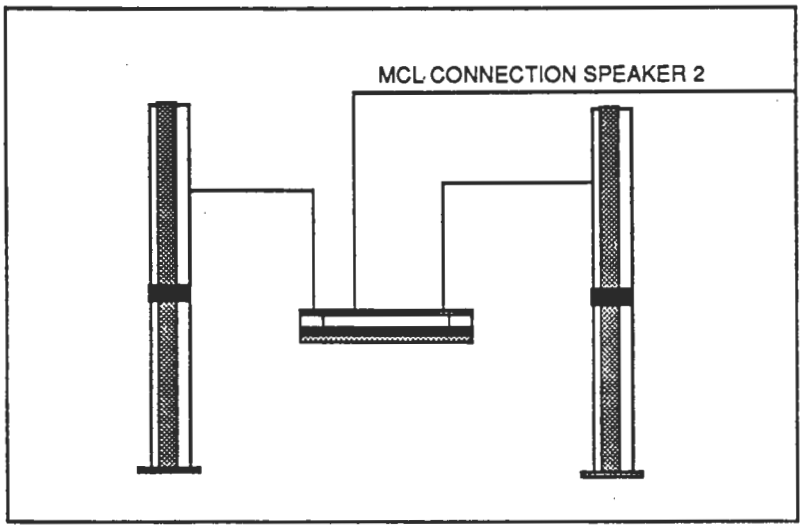
The Beolink system allows an almost endless variety of hookup options, and it is therefore impossible to illustrate all of them. However, the illustrations in this section include those applications which you would most likely encounter in a normal installation.

This section also deals with the distribution of audio and video signals around the house.

In all cases where multi-room operation is desired, it will be necessary to run Master Control Link cable. Suggestions and guidelines are listed in this section.

Distribution of RF signals is also necessary when a Bang & Olufsen VideoSystem 5000 is used for distribution of video signals in a multi-room system. This section gives suggestions and guidelines for distribution of these signals.

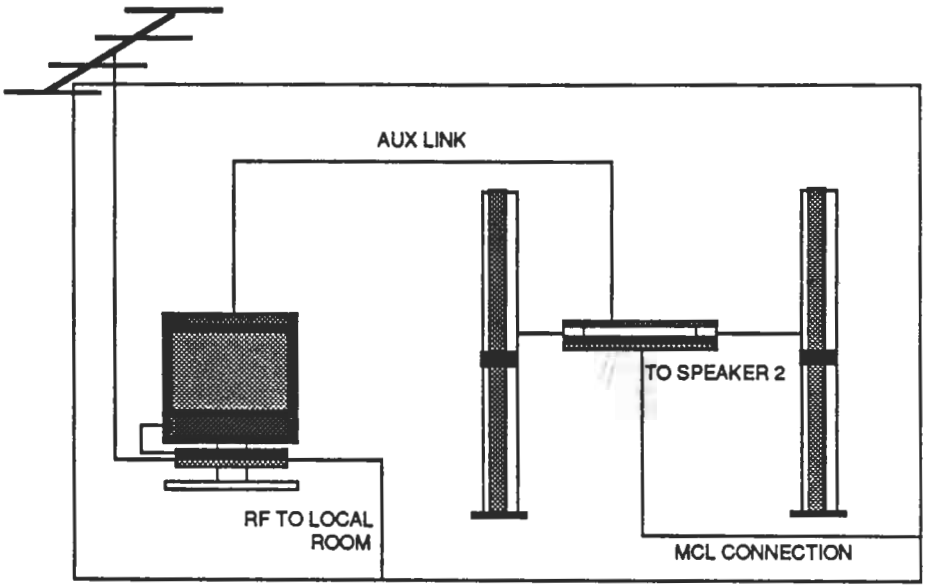
CENTRAL ROOM WITH AUDIO SYSTEM ONLY



A Bang & Olufsen audio system in the central room offers the following features:

- Remote control of the audio system by means of a Beolink terminal or Master Control Panel.
- Automatic turn-on and turn-off of Beolab® series powered loudspeakers along with the audio system.
- Display of system operating status when Beolab® series loudspeakers are connected.
- The ability to connect a MCL 2ABLI or MCL 2AV for complete access to the system from any room in the house.

CENTRAL ROOM WITH AUDIO AND VIDEO SYSTEM (BEOLINK SYSTEM)



A Beolink Audio/Video System offers more operating options than the mere sum of options provided by the individual products.

Examples of some operating options provided by this arrangement:

•Remote control of the audio and video system by means of the Beolink 1000 terminal.

• Remote control of the video tape recorder via the TV.

• Sound from the radio, CD player, video tape recorder or turntable through the tv speakers.

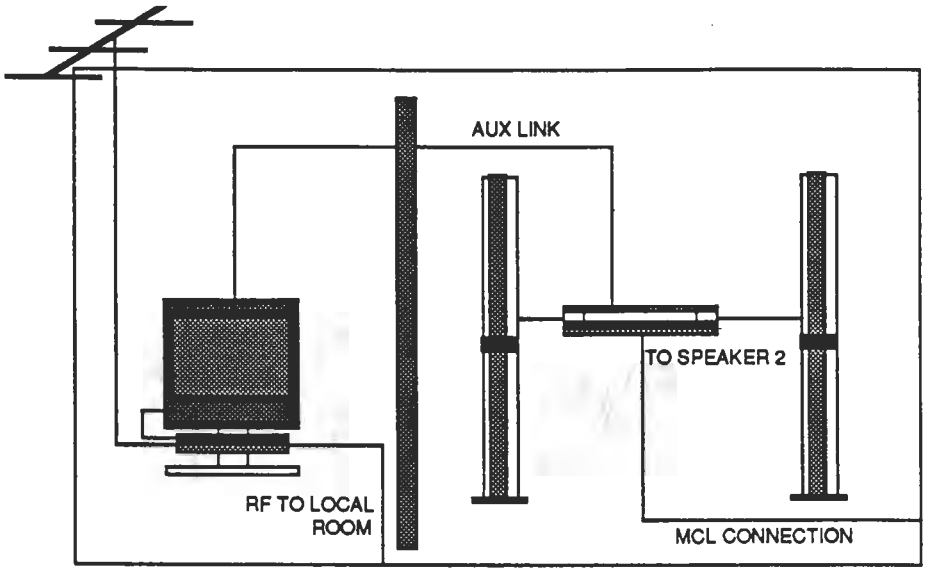
• Recording of FM stereo sound and TV picture on the VCR during a simulcast.

• The VCR can be used as a remote controlled audio tape recorder with up to 8 hours of recording time.

• The ability to distribute audio signals to other rooms in the house and to control them using the Beolink 1000 terminal.

•The ability to distribute RF signals from a connected antenna or cable system, plus the VX 5000 VCR and two RF decoders, from the central room to any other room in the house.

AUDIO AND VIDEO SYSTEMS PLACED IN SEPARATE ROOMS.

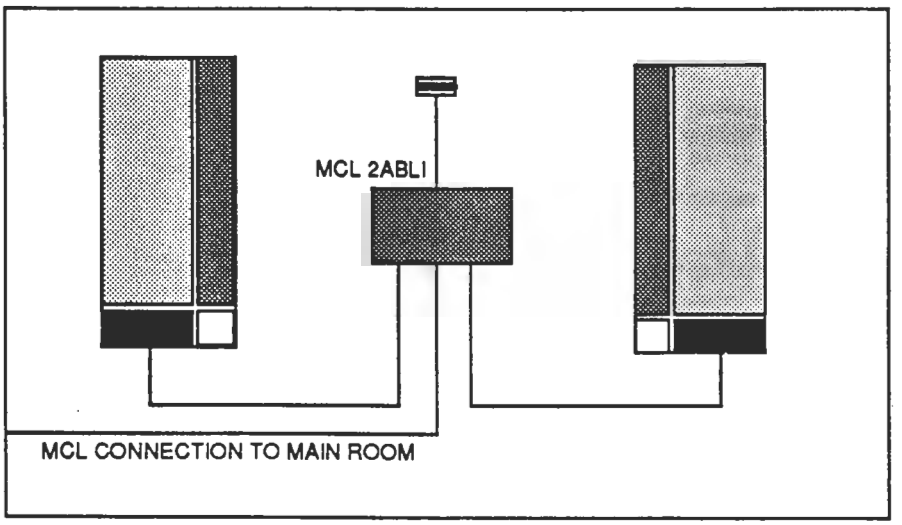


A Beolink Audio/Video System placed in two separate rooms allows all sources to be accessed from either of the rooms via the Beolink 1000 terminal.

Examples of some operating options provided by this arrangement:

- Remote control of the audio system through the video system.
- Remote control of the video system through the audio system.
- Sound from the radio, CD player, video tape recorder or turntable through the tv speakers.
- Sound from the tv, or video tape recorder through the audio system speakers.
- Recording of FM stereo sound and TV picture on the VCR during a simulcast.
- The VCR can be used as a remote controlled audio tape recorder with up to 8 hours of recording time.
- The ability to distribute audio signals to other rooms in the house via the MCL 2ABLI or MCL 2AV and to control them using the Beolink 1000 terminal.
- The ability to distribute RF signals from a connected antenna or cable system, plus the VX 5000 VCR and two RF decoders, from the central room to any other room in the house.

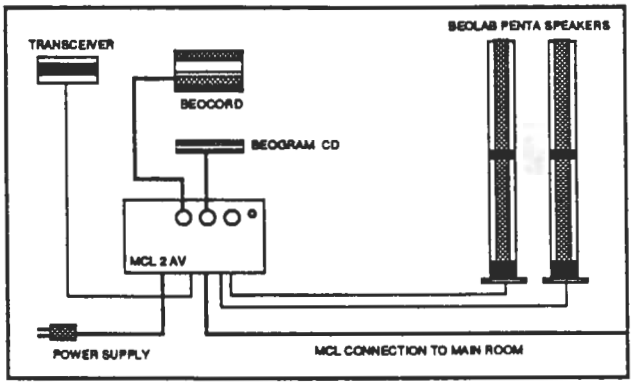
LOCAL ROOM WITH MCL 2ABLI AND LOUDSPEAKERS

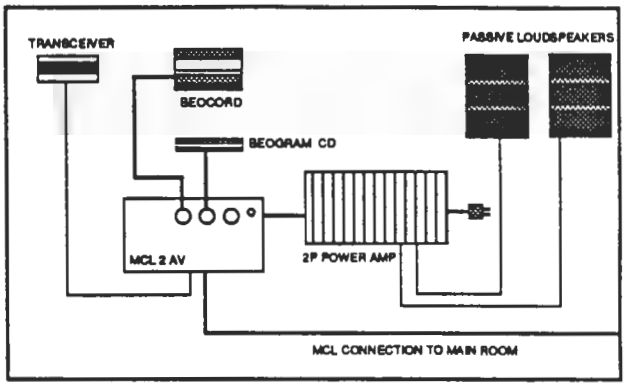


Examples of some operating options provided by this installation:

- Remote control of radio, tape recorder, CD player, video recorder and TV from the local room via the MCL 2ABLI.
- Sound from the central room tv or vcr over the local room speakers.
- Sound from central room audio system through local room speakers.
- Muting and system timer functions activated via the MCL transceiver.
- Transmission of system status data via MCL transceiver to 2-way terminals (e.g. MCP 5500).
- Multi-room control of lights in rooms equipped with MCL 2ABLI or MCL 2AV and LC 1 light control.

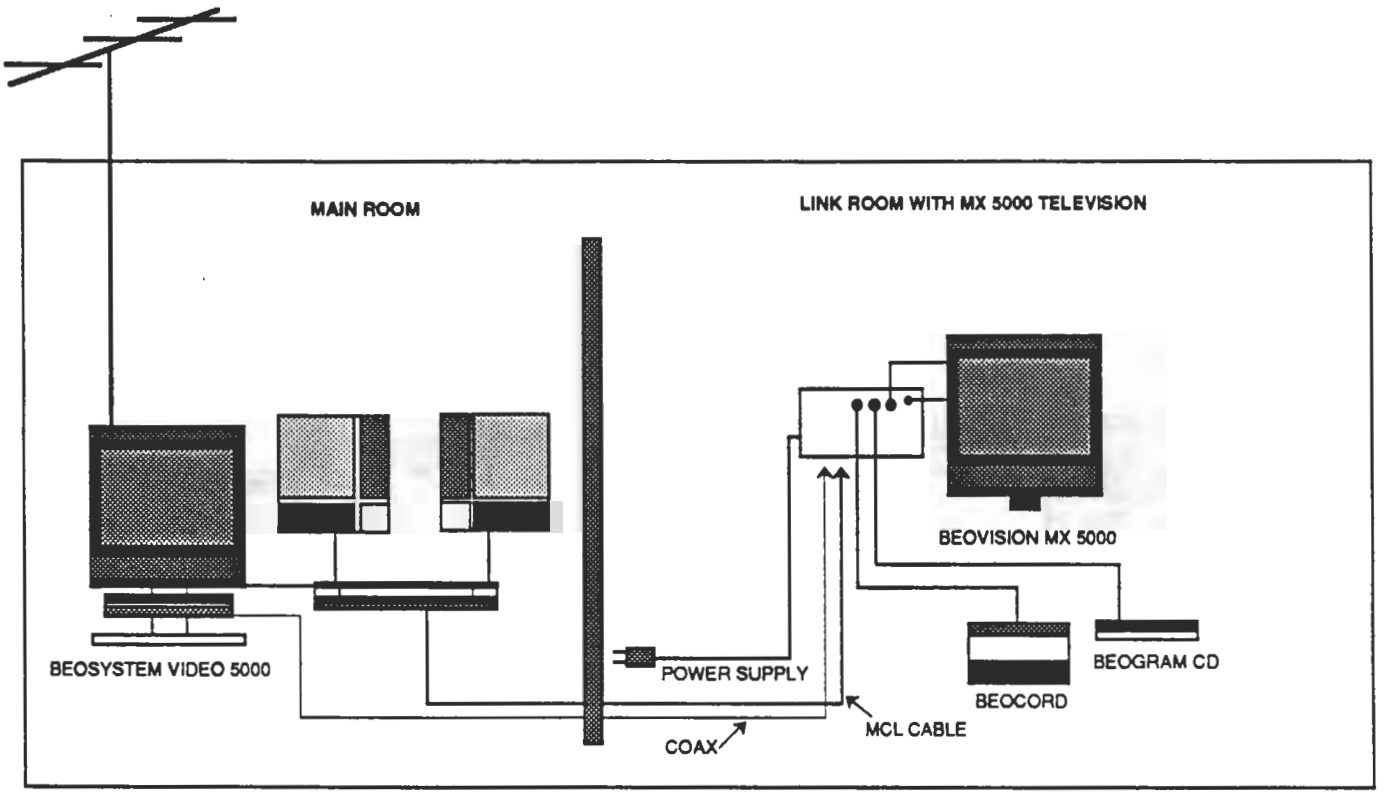
LOCAL ROOM WITH MCL 2AV AND MCL 2P, OR BEOLAB SERIES LOUDSPEAKERS.





Examples of some operating options provided by this installation:

- Remote control of central room audio and video system functions via the Beolink terminal or MCP.
- Remote control of Bang & Olufsen local audio source components when connected.
- Sound from the central room video and audio systems over the local room speakers.
- Remote controlled volume settings independent from the central room audio and video systems.
- Muting and system timer functions activated via the MCL transceiver.
- Transmission of system status data via MCL transceiver to 2-way terminals (e.g. MCP 5500).
- Multi-room control of lights in rooms equipped with MCL 2ABLI or MCL 2AV and LC 1 light control.



Examples of some operating options provided by this installation:

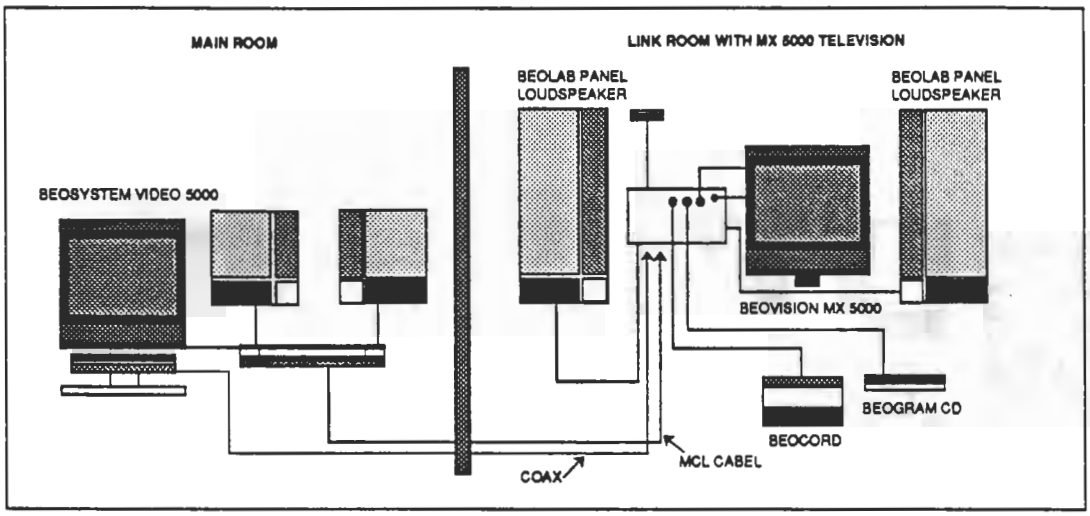
- Remote control of central room audio and video system functions via the Beolink terminal through the MX 5000.

- Remote control of Bang & Olufsen local audio source components when connected.

- Sound from the central room video and audio systems over the tv speakers.

- Remote controlled volume settings independent from the central room audio and video systems.

LOCAL ROOM WITH MCL 2AV AND SECOND MX 5000 TELEVISION USING MCL 2P OR BEOLAB POWERED LOUDSPEAKERS.



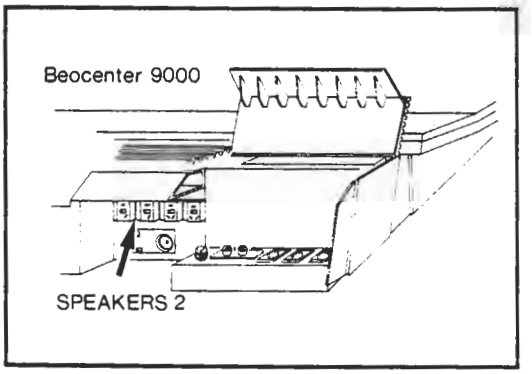
Examples of some operating options provided by this installation:

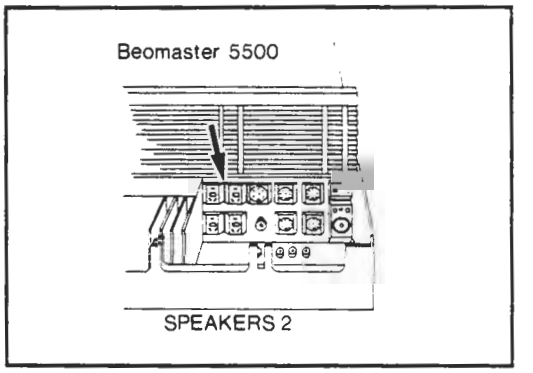
- Remote control of central room audio and video system functions via the Beolink terminal or MCP.
- Remote control of all Bang & Olufsen local room audio and video components via the Beolink terminal or MCP.
- Sound from the central room video and audio systems over the local room speakers or the second tv set.
- Remote controlled volume settings independent from the central room audio and video systems.
- Muting and system timer functions activated via the MCL transceiver.
- Transmission of system status data via MCL transceiver to 2-way terminals (e.g. MCP 5500).
- Multi-room control of lights in rooms equipped with MCL 2ABLI or MCL 2AV and LC 1 light control.

DISTRIBUTING SOUND FROM THE CENTRAL ROOM TO LOCAL ROOMS

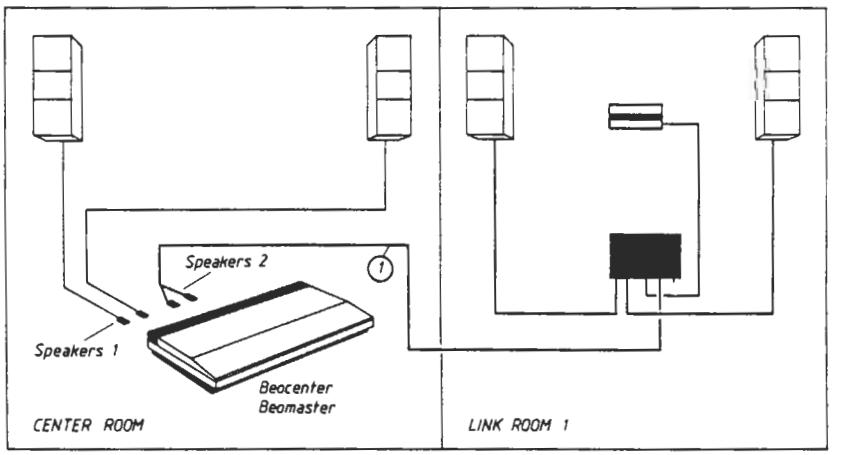
With MCL 2ABLI and MCL 2AV it is possible to install Links in four rooms directly, and in up to 16 rooms if an MCL 2E expander is installed. This is also true for any combination of MCL 2ABLI and MCL 2AV.

The signals for sound distribution from the main audio system always originate at the speaker #2 output as illustrated below.





Distribution of sound to one local room.

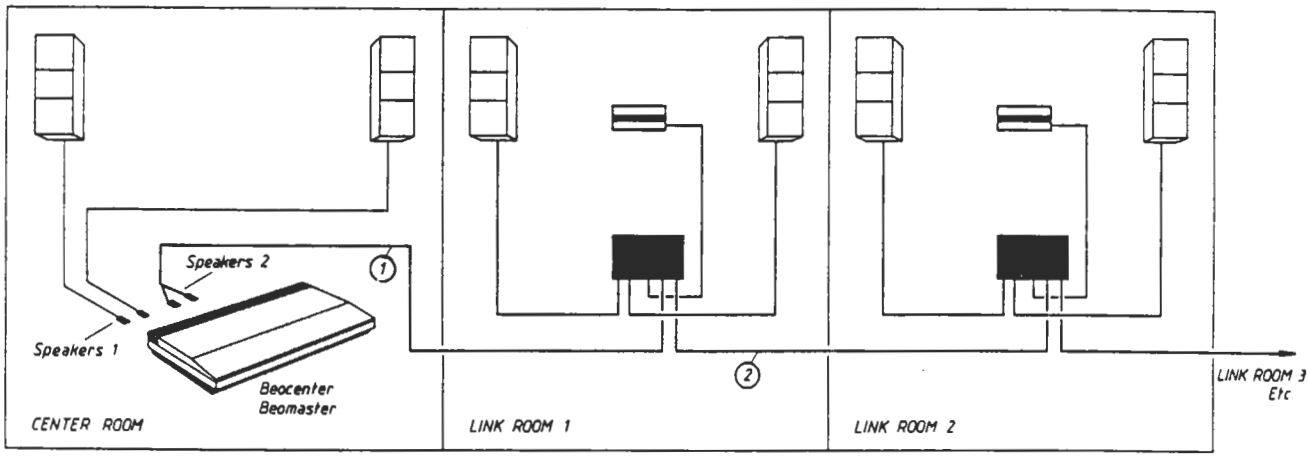


This is the simplest installation of a distributed audio system.

A premade MCL cable with 3 pin plugs is used for connection between the audio system and the local room.
These are available in 5 different lengths (see section 9).

Wiring may be concealed if desired by using decorative conduits (see section 9).

Distribution of sound to several rooms may be handled in various ways.

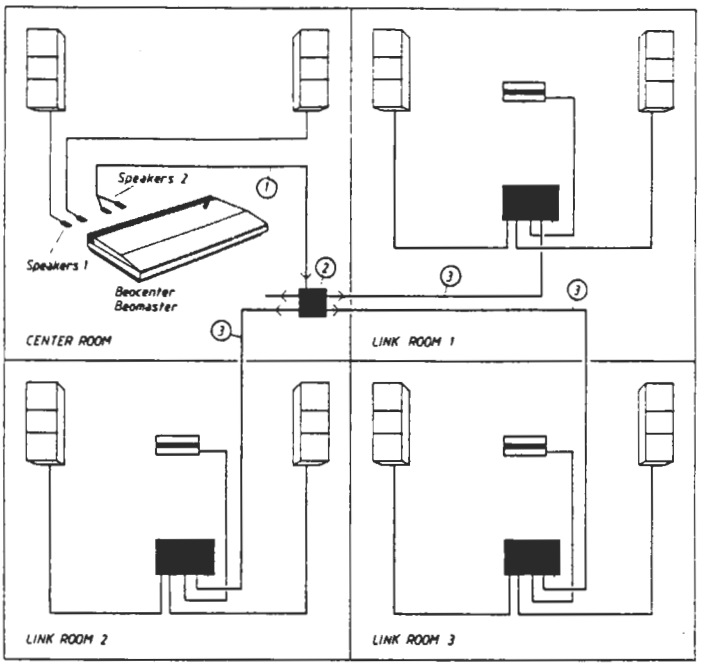


This installation example requires:
(The following numbers refer to illustrations in the above drawing)

1. A cable with 3-pin speaker plugs. It must be long enough to reach from the audio system speaker 2 output to the location of the first MCL relay box or socket panel.

2. An additional length of 7 conductor MCL cable for each additional run to the next link box.

It is also possible to distribute the sound signal from the central room to a local room via a central distribution point.



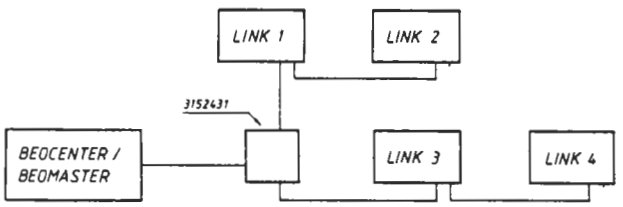
This distribution example requires:
(The following numbers refer to the above illustration)

1. A cable with 3-pin speaker from the speaker #2 outputs of the audio system to a junction box.

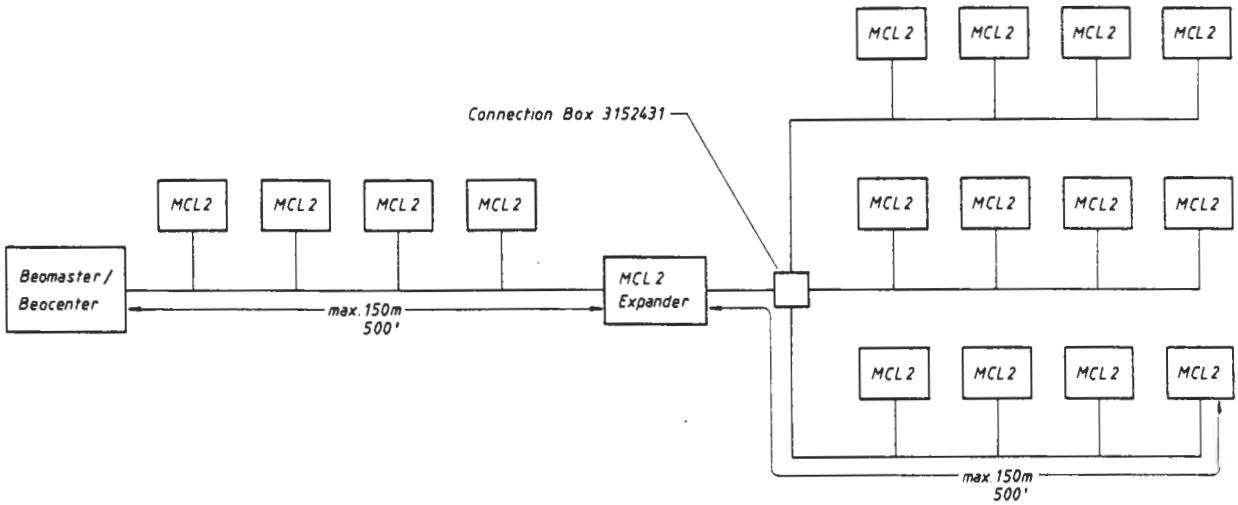
2. A junction box (No. 3152431-see section 9 for details).

3. Required lengths of MCL cable (see section 9 for details) run from the connection box to the relay box or socket panel location.

The two methods of distribution may also be combined as shown below.



When distribution of sound to more than 4 local rooms is required, an MCL 2E must be added.



Sound may be distributed to an additional 12 rooms by using the MCL 2E expander. The illustration below shows the MCL 2E connected after the first 4 links in the system.

The expander is normally installed after the first four links. Make sure that 110 volt AC is available at the location of the expander.

The total length of cable connected after the expander must not exceed 1500 ft., and no single run after the expander should exceed 500 ft. In other words, do not run a series string of MCL 2ABLI,MCL 2AV or a combination of the two greater than 4 links and 500 ft. of cable after the expander.

Distribution of picture signal from the central room to local rooms.

Introduction to distributed picture.

When a Bang & Olufsen video system has been installed in the central room and connected to an audio system, it is possible to distribute and control picture signals from the video system via the MCL system. The control of the VX 5000 is accomplished via a Datalink connection between the MX 5000 television and the auxiliary input of the audio system. VCR control signals sent via the MCL line are then relayed through the audio system to the video system.

In order to view pictures in the local room, it will be necessary to distribute rf signals from the main video system to the local room television. This distribution takes place in addition to distribution of sound signals.

In addition to being able to watch videotape programs from the central room on a local room television, distribution of picture signals also gives the following capabilities:

- Access in the local room to antenna or CATV signals connected to the central room video system.

- Access to picture signals from up to two additional rf based devices (e.g. cable descramblers) connected to the central room video system.

The following pages give general suggestions for these situations:

1. Adding distribution of picture signals to an existing antenna or cable system.

2. Using the rf distribution section of MCL 2AV when no existing distribution system is present.

General guidelines for distribution of picture signals.

When distributing signals from the central room to the local rooms a satisfactory result will depend upon two essential elements:

1. A clear signal from the antenna or CATV connection to the video system. This normally requires a signal of 1000uv (0dBmv) or greater.

2. A properly designed and installed distribution system. The best quality coaxial cable, splitters, amplifiers, etc. will generally give the best performance.

Please note that this section does not provide the information necessary for designing a signal distribution system from scratch. If you have never installed such a system we suggest you contact a master antenna system specialist in your area for assistance.

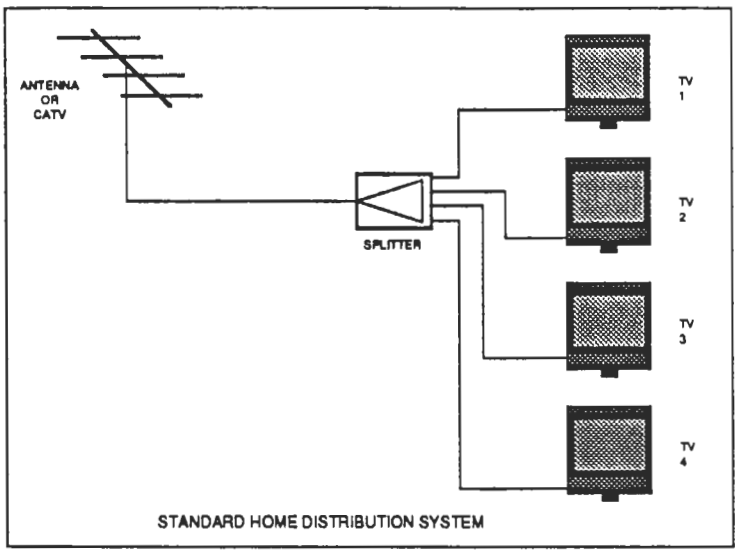
If you wish to learn more about distribution of rf signals there are a number of excellent books written on the subject. One which is particularly recommended is:

Channel Master
MATV Systems Planning Manual

available from:

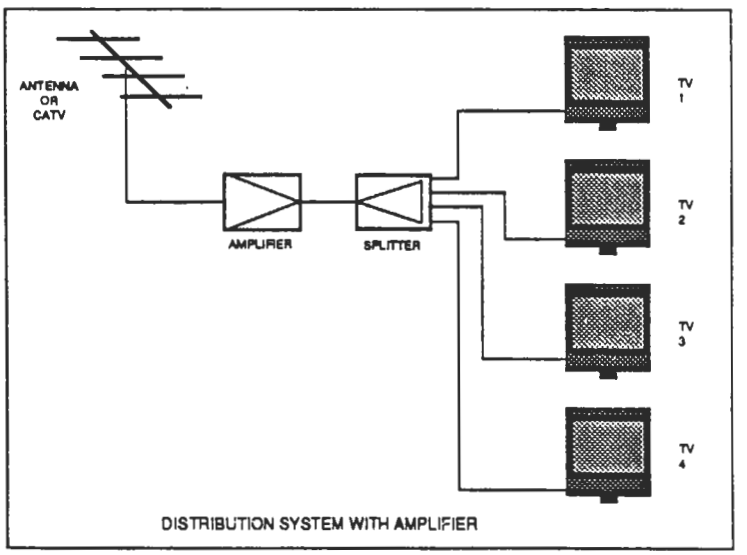
Avnet Inc.
Smithfield, North Carolina
27577

Basic methods of picture distribution in the home



STANDARD HOME DISTRIBUTION SYSTEM

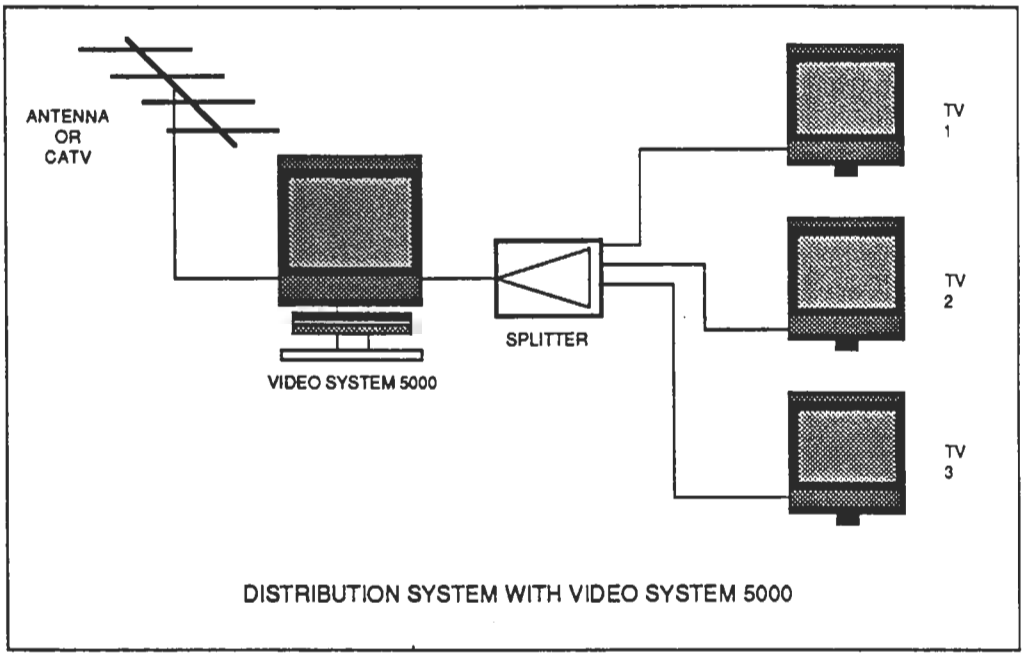
The above block diagram indicates the standard method for distribution of antenna or CATV signals when more than one television is connected in the home. The distribution is normally referred to as a "home run" system. This means that the distribution point is usually in a centralized location (e.g., the basement or attic). A separate coaxial run is then installed from the distribution point to each room. A signal splitter is necessary in order to divide the signal evenly and to provide a degree of isolation between the televisions in each room.



DISTRIBUTION SYSTEM WITH AMPLIFIER

In those cases when the incoming signal is distributed to a large number of rooms, a signal amplifier may be inserted between the antenna or CATV wire and the splitter. Note that the amplification and splitter function will often be combined in one unit.

Adding Video System 5000 to an existing distribution system.



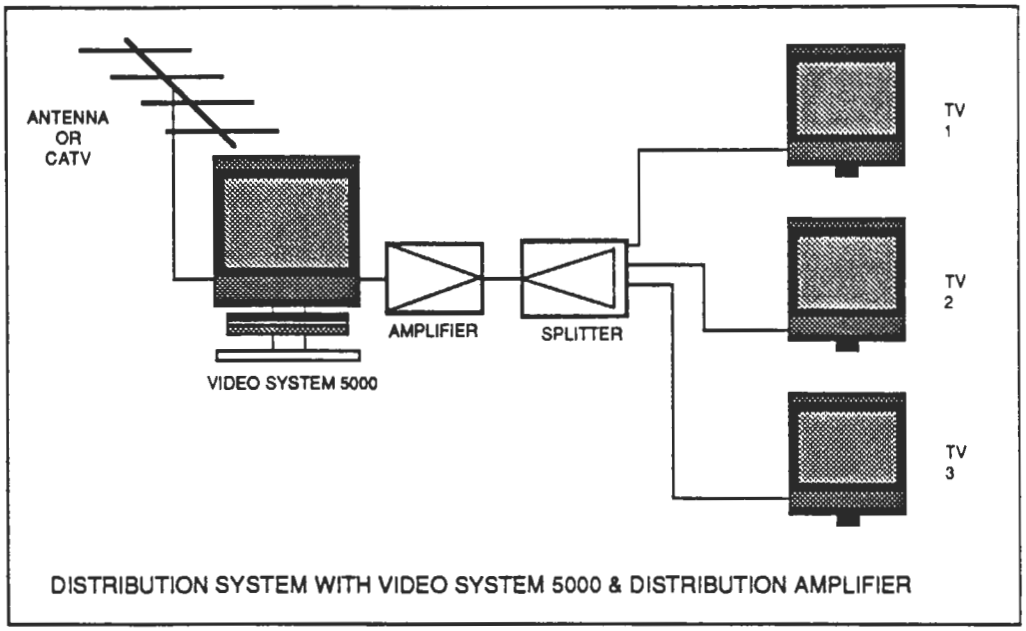
DISTRIBUTION SYSTEM WITH VIDEO SYSTEM 5000

In the above diagram a Video System 5000 has been installed in the central room and connected to an existing distribution system Note that the video system is inserted between the antenna or CATV connection and the rest of the distribution system. It will therefore be necessary to run an additional coax from the video system 5000 to the central distribution point. When connected in this way, all antenna or CATV signals will be passed through the video system to the rest of the house. The video system adds three more signals: the VCR signal which is broadcast in the range between UHF channel 28-38, and the two additional rf devices which are broadcast in the range between UHF channels 50 and 57.

The specific method for connecting the Video System 5000 to a distribution system varies depending upon the setup code which is used for the video system and which accessories and devices are attached. Consult pages 12-18 of the Video System 5000 owner's manual for specific diagrams. The dotted line in each of the diagrams marked "link" is the rf output from the video system to the signal distribution system.

Those diagrams in the owner's manual which show two "link" outputs indicate that two separate coaxial distribution systems will be required from the central room to the local rooms. This is most often the case when an antenna and a CATV system have both been attached to the Video System 5000.

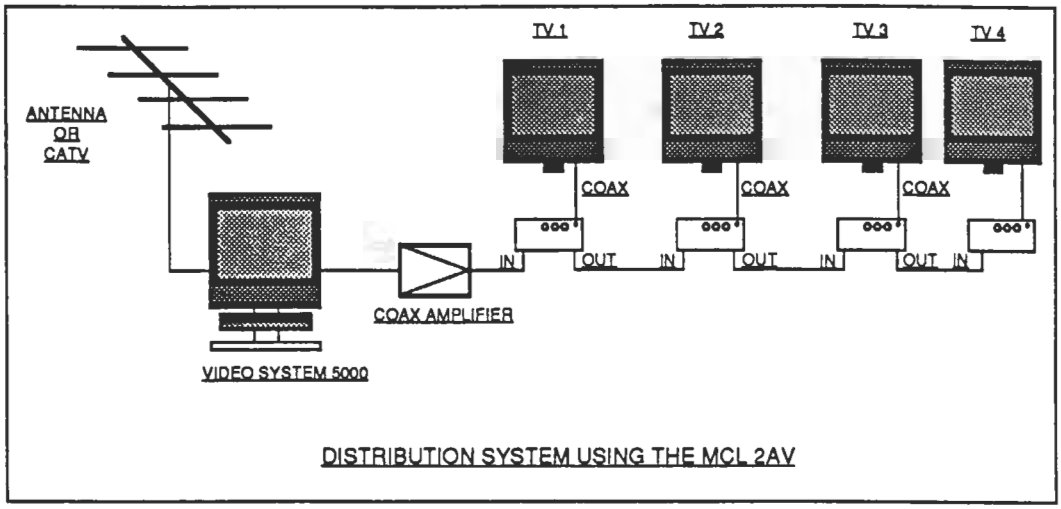
Adding Video System 5000 to an existing distribution system with amplifier.



DISTRIBUTION SYSTEM WITH VIDEO SYSTEM 5000 & DISTRIBUTION AMPLIFIER

In those cases where a signal amplifier is present, the distribution amplifier should be installed between the output of the video system and the rest of the distribution system. This will ensure that the video system in the central room is not overloaded by the amplifier, and that all signals, including those added by the video system will be distributed with adequate gain.

Using MCL 2AV for distribution of picture signals.



DISTRIBUTION SYSTEM USING THE MCL 2AV

The MCL 2AV contains a built-in rf distribution system which can be used in those cases when a distribution system is not built into the house. Unlike the distribution methods mentioned previously, the MCL 2AV is designed to be wired in a "daisy chain" fashion. In technical terms, this type of distribution is referred to as a "tapoff" system.

In a tapoff system a high degree of signal isolation is necessary between the coaxial cable feeding the system and the tapoff point for the television set. This is accomplished in the MCL 2AV by using a built-in active isolation amplifier. However, there is still signal loss in such a system. Therefore, the following precautions and limitations must be followed when attempting to use the MCL 2AV for rf distribution:

- Use only "double shielded" coaxial cable either type RG-59 or better yet, RG-56.

- Limit the distribution to 4 MCL 2AV with no more than a total of100' of coax total.

- For best results install a high quality signal amplifier (min. 20dB) with separate gain controls for VHF and UHF between the video system and the first MCL.

- You must use a European antenna plug at the MCL 2AV for connection to the television (part no. 7220049). This plug is not well shielded. Therefore, do not use the MCL 2AV for signal distribution in areas where ambient signal strength is high.

- On the last MCL 2AV in the line, always attach the terminating resistor in the MCL relay box.

GENERAL INFORMATION

This section describes the various methods for installing the transceiver, relay box and socket panel for the MCL 2 system.

Each installation is unique and presents its own requirements. However, most installations will require accessories which are not supplied with the MCL 2ABLI and MCL 2AV.

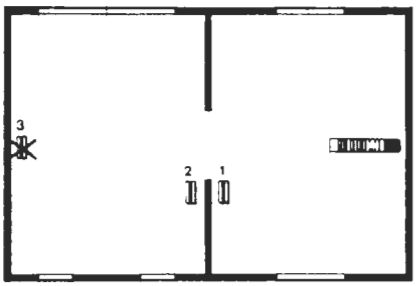
We therefore recommend that you always carry the following tools and accessories:

- 1/2" industrial quality electric drill.
- Complete set of normal size drill bits.
- Long drill bits for running wires through floor boards.
- Masonry bits.
- 1-5/8" hole saw for wall plates.
- Screwdrivers, pliers, cutters, etc.
- Portable soldering iron and rosin core solder.
- Portable digital voltmeter.

The following suggested items are available from Bang & Olufsen. See section 9 for part numbers.

- MCL cable, round or flat.
- Raw transceiver cable.
- Premade MCL cables.
- Staple guns for MCL and transceiver cables.
- Rough-in plates.
- DIN speaker plugs, 2 and 3 pin.
- 8 pin DIN wall plates.
- 4 pin DIN speaker wall plates.
- Terminal strips, 5 and 7 conductor.
- DIN-RCA adaptors.
- Rough in plates for transceivers.
- Table top mount for MCL transceiver.

These are minimum suggestions. Special installations may require additional accessories and tools.



Physical placement of the transceiver

1. The transceiver must be positioned in the open so that it can see the remote control that is to operate it. Concealed positions will shorten transmission distance.

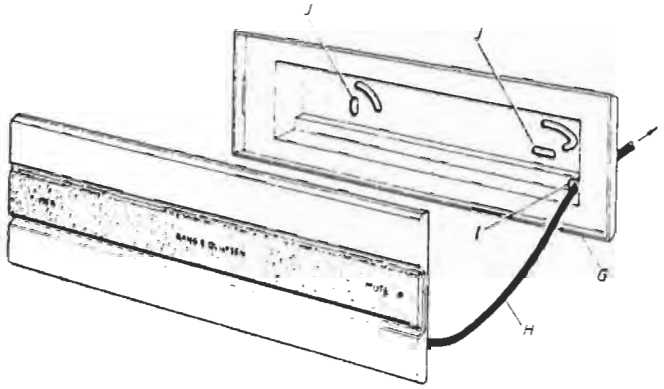
2. The transceiver should not be positioned in direct sunlight or direct strong artificial light (e.g. a spotlight) as this reduces its sensitivity of operation and results in a shorter range.

3. The transceiver should not be positioned near objects radiating electrical noise (radio frequency interference) such as dimmers, televisions or any electronics containing micro-computers. Keep these items at least 3ft. away. RFI noise may reduce the range of remote control units considerably.

4. Cable length between relay box and transceiver must not exceed 32'. The cable supplied is 16' Use a terminal strip #7505029 and cable #6100115 where extension is required.

5. When deciding on the position of the transceiver, remember that it should not be in a direct line of sight with other Link rooms, since this could result in the switching on of speakers which are not supposed to be switched on. Use light filters # 3370162 to reduce transceiver range when undesired actuation occurs.

6. If the transceiver is placed in an outdoor mounting box, please note the that it will not function at temperatatures below freezing. Whenever lower temperatures are encountered a switch should be mounted to permit the transceiver to be shut off during winter. A double pole-single throw switch should be mounted in series with the green and the white transceiver wire. (See section 7).



Mounting the transceiver

Using double sided mounting tape:

Run the cable (H) through the hole (I) in the rear plate (G) and attach the transceiver to the rear plate. Affix the two pieces of mounting tape enclosed in the bag marked "Transceiver" vertically to the back of the rear plate (G).

Using screws in a wall (not flush mounted)

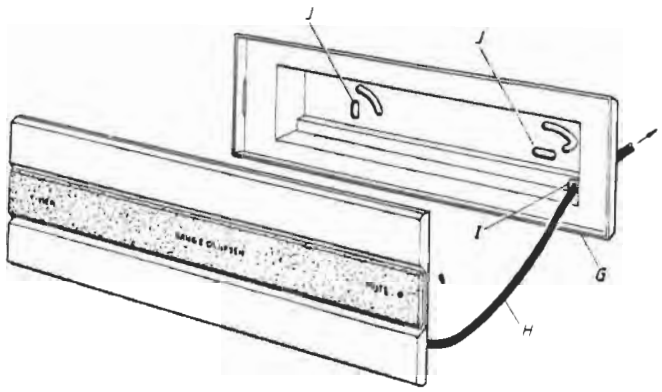
Fasten the rear plate (G) to the wall through the holes (J) using the screws and, if necessary, the anchors enclosed in the bag marked "Transceiver". Run the cable (H) through the hole (I) and attach the transceiver to the rear plate. If the cable is to be run in the groove on the back of the rear plate, do this before fastening the rear plate to the wall completely.

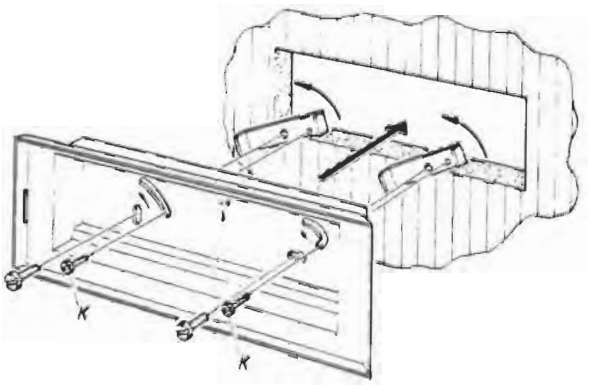
Flush mounting in drywall construction.

Note: Before mounting in drywall, check that no obstructions in the wall will prevent wiring inside the wall. Also check that no studs or electrical installations in the wall will obstruct the mounting of the transceiver.

In preconstruction, use rough-in plate #3124110 (normal cutout) or #9312000 (oversized opening for dropthrough of MCL 2ABLI relay box only)

Place the rear plate (G) on the wall in the position desired, and mark the outline of the projecting part of the rear plate on the wall using a pencil.
Before proceeding, make sure that the line has been drawn so that the transceiver will be mounted straight, and that the hole left after sawing will be covered by the rear plate.





Drill a hole in each inside corner of the rectangle you have drawn. Cut the hole using a keyhole saw (take care that the saw blade does not touch the opposite side of the wall). Saw exactly along the line drawn so that the line does not remain visible on the wall.

If it is desirable to accomodate the relay box inside the dry wall cavity and still have service access to the box, a convertor plate # 7219067 should be used. The cut-out should then be approximately 6-1/4" x 2-1/2". Note: Drop-through of the MCL 2AV socket panel is not possible.

Run the cable (H) through the hole (I) in the rear plate (G) and into the hole in the wall. Run the cable to the location of the relay box for connection.

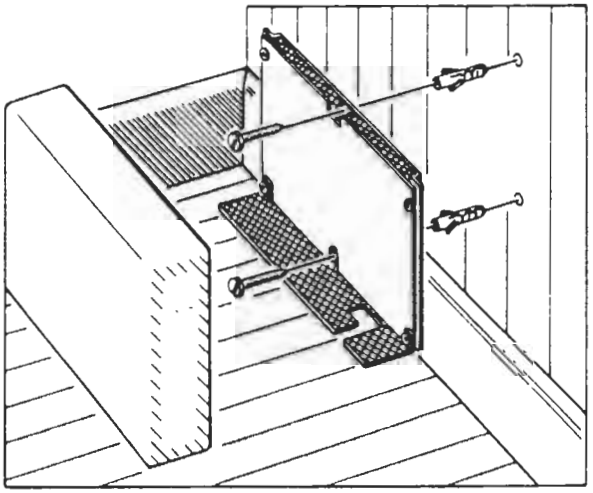
Mount the two clamps enclosed in the bag marked "Plasterboard" as shown. Fit the rear plate into the hole in the wall and set the clamps vertically by pushing the screws (K) upwards and to the left as far as they will go. Then tighten all four screws.

Flush mounting In solid wall construction

Mounting can also be carried out using a flush mount rough- in box which is imbedded in a solid wall, eg. a brick wall. (See section 9).

Table top mount

The transceiver can be mounted on a table-top mount which can then be placed on a table or a shelf. The part number is 7219060.



Non-concealed installation of MCL 2ABLI relay box

The simplest means of installing MCL 2ABLI relay box is to place it in the same room as the transceiver and loudspeakers. The advantage of this type of installation is the ability to make all connections without running holes in walls or installing additional accessory sockets.

Of course, in order to make a neat installation, it is advisable to find a spot where the relay box and the wires may be hidden (e.g., behind a curtain, in a cabinet, behind a speaker, etc.).

A set of wall anchors and screws is supplied for the purpose of mounting the relay box to the wall. Locate the relay box so that the 1" overhang of the cover does not interfere with the baseboard, and run the transceiver cable, MCL cable, and speaker cables to this location.

Drill two holes, approx. 3-1/8" apart vertically as indicated in the diagram. Install the anchors and mount the relay box with the screws provided. Plug in the speakers using either 2 or 4 pin DIN speaker cables. If you are using unterminated speaker cable, see section 9 for the part numbers of speaker plugs.

See the end of this section for connection of MCL and transceiver cables to the relay box.

Concealed installation of MCL 2ABLI relay box

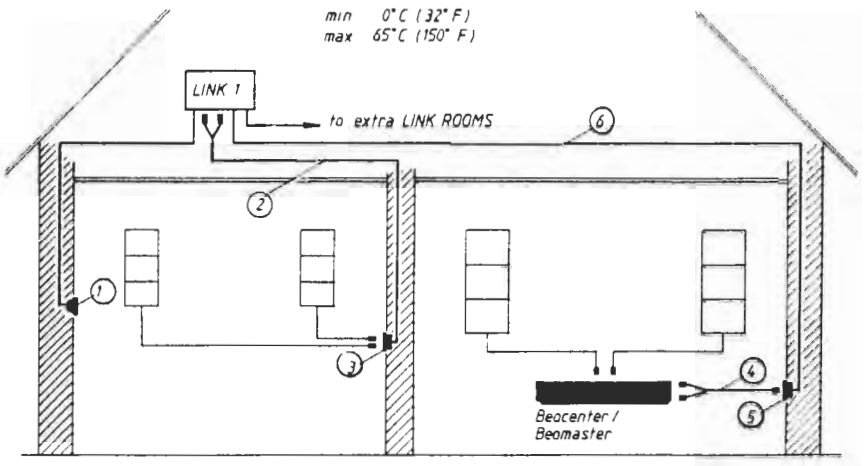
Concealed installation of the MCL 2ABLI relay box is normally done either in the case of new construction or renovation and the wiring is accomplished normally before the drywall is installed.

The installation may be implemented in countless ways by means of the various installation accessories mentioned in section 9.

Wires are run inside walls, and in some cases the wire may even be run on the outside of a building. Of course, compliance with local building and electrical codes must always be observed.

Whether connected as a "home-run" or a "daisy chain", all Link units are electrically in parallel with each other. This means that a short circuit at any Link may cause the entire system to malfunction. Therefore, exercise extreme care when making connections.

The following examples show two ways of combining a system, but there are many other ways as well.



Example 1 (Single MCL 2ABLI)

In addition to the relay box this installation requires:
(The following numbers refer to the above illustration)

1. Where drywall is used, flush mounting of the transceiver needs no further accessories.

A transceiver rough-in plate (3124110) is available for use in the pre construction phase.

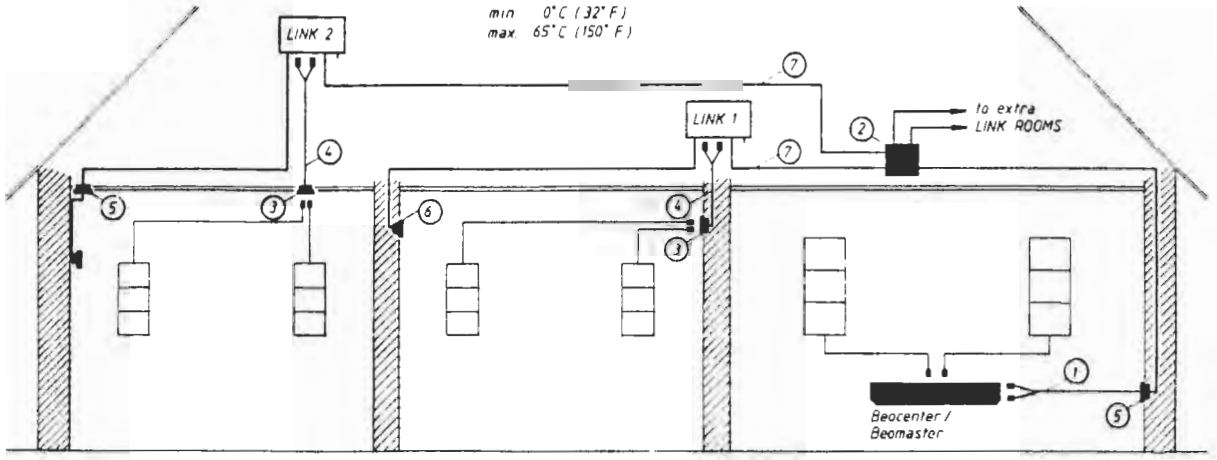
If it is desirable to hide the relay box inside the wall behind the transceiver, convertor plate (7219067) may be used.

2. Ordinary speaker cable or shielded speaker cable if active loudspeakers are being used. (See section 9-unterminated cables)

3. Wall plate with DIN speaker socket.
(See section 9-wall plates)

4. Link cable with 2 x 3 pin speaker plugs and 8 pin DIN plug, to connect the audio system to 8 pin DIN wall plate. (See section 9-terminated cables)

5. 8 pin DIN wall plate. (See section 9-wall plates)



Example 2 (Multiple MCL 2ABLI units)

Besides a Link unit in each room, this illustration requires: (The following numbers refer to the above illustration)

1. A cable with 2 x 3 pin speaker plugs of appropriate length. (See section 9-terminated cables)

2. A junction box with 7 conductor terminal strip (see section 9-terminal strips and junction boxes)

3. A wall plate with 4-pin DIN speaker socket (see section 9-wall plates and rough-ins)

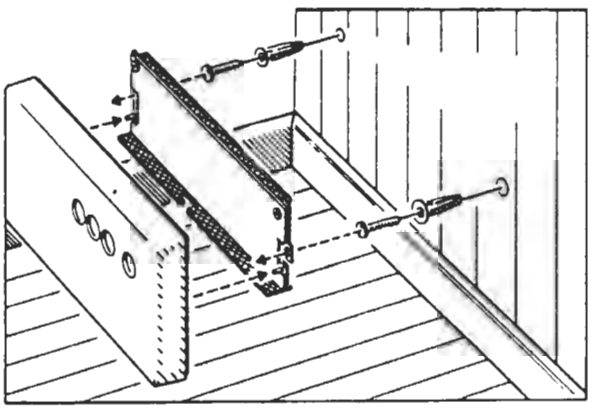
4. Regular speaker cable. (If the installation is using Beolab loudspeakers, use shielded speaker cable. See section 9-unterminated cables.)

5. A cover plate for cable entry, or a 8 pin DIN wall plate. NOTE: If using the 8 pin DIN wall plate, use a pre-made 2 x 3 pin to 8 pin MCL cable to connect the audio system to the wall plate. (See section 9-wall plates and rough-ins, and section 7 for wall plate wiring diagrams.)

6. In light partition walls, flush mounting of the transceiver needs no further accessories.

If it is desirable to hide the relay box inside the wall behind the transceiver, a convertor plate may be used. (See section 9-transceiver accesssories).

7. Link cable of appropriate length is used to connect the MCL system together. (See section 9-unterminated cables).



Non-concealed installation of MCL 2AV socket panel

The simplest means of installing MCL 2AV socket panel is to place it in the same room as the transceiver and loudspeakers. When passive loudspeakers are used it will also be necessary to install the MCL 2P amplifier, in order to use local sources and have independent volume control capability.

The advantage of non-concealed installation is the ability to make all connections without running holes in walls or installing additional accessory sockets. This is important when local sources are being installed

Of course, in order to make a neat installation, it is advisable to find a spot where the socket panel and the wires may be hidden (e.g., behind a curtain, in a cabinet, behind a speaker, etc.).

It will be necessary to have ac power available near the MCL 2AV, or near the MCL 2P if it is used. NOTE: The MCL 2AV requires 15 Vdc either from its own power supply or from the MCL 2P.

A set of wall anchors and screws is supplied for the purpose of mounting the socket panel to the wall. Locate the socket panel so that the 1" overhang of the cover does not interfere with the baseboard, and run the transceiver cable, MCL cable, local audio and video component cables, and Power Link cables from Beolab speakers or MCL 2P amplifier to this location.

Drill two holes, approx. 11-1/8" apart horizontally as indicated in the diagram. Install the anchors and mount the socket panel with the screws provided.

Connect the Beolab speakers or MCL 2P to either of the Power Link sockets using appropriate length Power Link cables.

Connect local audio components (Beogram CD, Beogram turntable with built-in preamp, or Beocord) to the appropriate sockets on the front of the panel. Note that the turntable is plugged into the CD socket.

If a second MX 5000 television is being used in the local room, connect it using a "AUX" cable. (See section 9-terminated cables, and section 2-connecting a second MX 5000 television). Also, consult section 5 for the correct option programming.

See the end of this section for connection of MCL and transceiver cables to the socket panel.

Supply 15 volts dc to the MCL 2AV using either the ac power adaptor or the cable from the MCL 2P

Concealed installation of MCL 2AV socket panel

Concealed installation of the MCL 2AV socket panel is normally done either in the case of new construction or renovation and the wiring is accomplished normally before the drywall is installed.

Wires are run inside walls, and in some cases the wire may even be run on the outside of a building. Of course, compliance with local building and electrical codes must always be observed.

When concealing MCL 2AV in an attic, basement crawl space or closet, please observe the following:

1. Concealed installation of the socket panel requires that all connections to the panel be extended. This includes local audio sources, Power Link connections, MX 5000 TV, transceiver, and power supply. Bang & Olufsen stocks the necessary raw cables (for power supply use 18 ga. zip cord) and wall plates to extend these connections. (See section 9 for part numbers and section 7 for wiring diagrams). NOTE: USE ONLY BANG & OLUFSEN CABLES WHEN MAKING EXTENSIONS. DO NOT SUBSTITUTE CABLES.

2. There are limits to the amount of cable which may be used:

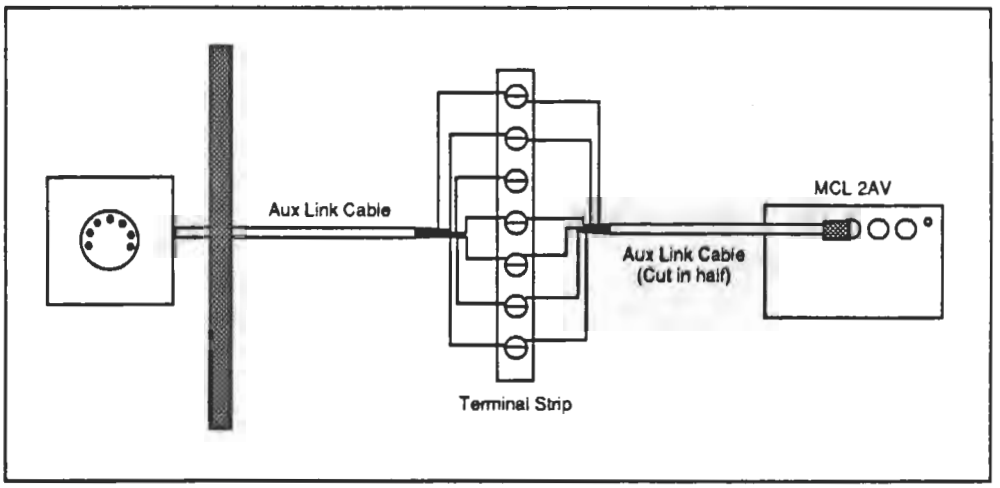
Power Link:	300 ft. total
Local Audio Sources:	100 ft. total
Transceiver:	32 ft. total
DC power supply	100 ft. total

Wiring of extension cables

Local sources and MX 5000 Television

When running extension cables between local audio sources and the MCL 2AV or between a MX 5000 television and the MCL 2AV, use unterminated cable (part no. 6250265-see section 9). This cable should be run in the wall and terminated in a 8 pin DIN wall plate near the location of the local audio sources or MX 5000 TV. (See section 7 for diagrams)

At the opposite end of the cable near the MCL 2AV it will be necessary to install a 7 pin DIN plug. (See section 7 for wiring diagrams)
It will often be difficult to install a DIN plug on the cable in a confined location such as an attic or crawl space. In this case the following solution is recommended:



Mount a 7 conductor terminal strip in a location within 2 ft. of the MCL 2AV socket panel. Cut an Aux Link audio cable (part no. 6270222) in half. Strip back approximately 3" of insulation to reveal the inner conductors. Remove approx 1/4" of insulation from each inner conductor. Twist the shield strands together to form a single conductor. Place each of the 7 conductors in one of the holes of the terminal strip-the location is not important at this time.

Strip back 3" of insulation from the Aux Link cable which has been run through the wall. Remove approx 1/4" of insulation from each inner conductor. Twist the shield strands together to form a single conductor. Place each of the 7 conductors in the holes of the terminal strip, matching the colors of the wires which have already been connected.

Repeat this process for all local audio source or TV extensions. Make sure that all connections are tight and that no strands (especially from the shield) are shorting to other conductors in the terminal strip.

Plug the 7 pin DIN plug into the appropriate socket on the MCL 2AV.

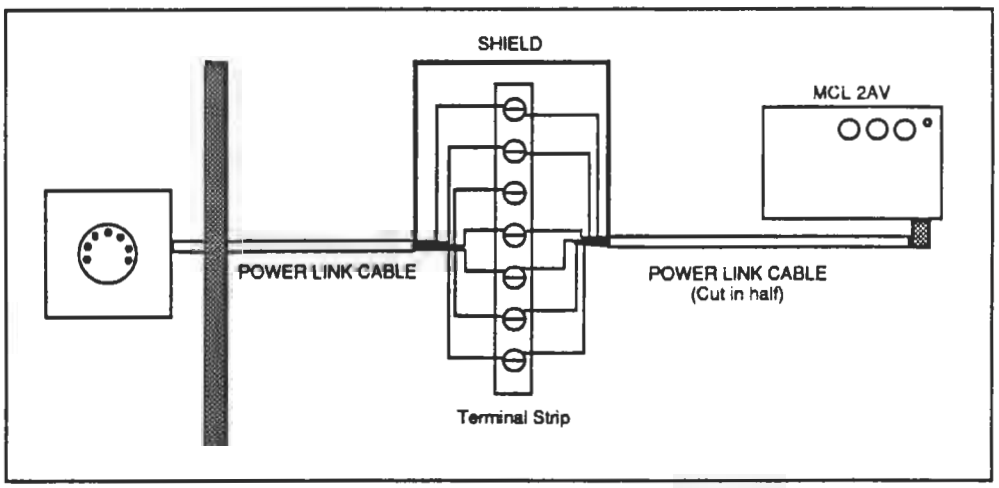
Wiring of extension cables

Power Link cable extensions

When running extension cables through the wall between MCL 2AV and Beolab loudspeakers, use unterminated cable (part no. 6250277-see section 9). This cable should be run in the wall and terminated in a 8 pin DIN wall plate near the location of Beolab speakers. (See section 7 for wiring diagrams)

At the opposite end of the cable near the MCL 2AV it will be necessary to install a 8 pin DIN plug. (See section 7 for wiring diagrams)

It will often be difficult to install a DIN plug on the cable in a confined location such as an attic or crawl space. In this case the following solution is recommended:



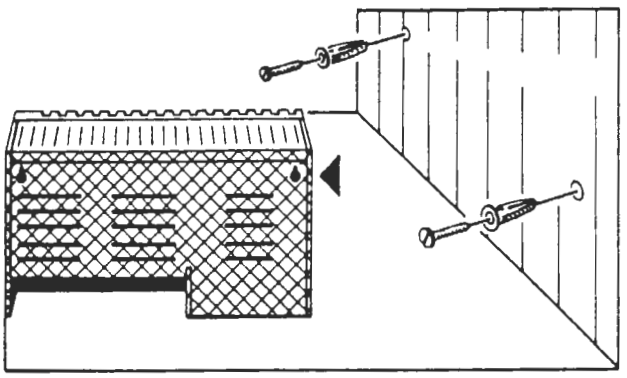
Mount a 7 conductor terminal strip in a location within 2 ft. of the MCL 2AV socket panel. Cut a Power Link cable (part no. 6270417) in half. Strip back approximately 3" of insulation to reveal the inner conductors. Remove approximately 1/4" of insulation from each inner conductor, and twist the shield strands together to form a single conductor. The white conductor contains a separate shield coiled around a small white wire. Twist this shield to form a conductor and strip back 1/4" of insulation from the white inner conductor.

Place each of the 6 insulated conductors, plus the shield around the white wire into one of the holes of the terminal strip-the location is not important at this time. Leave the remaining shield conductor hanging free.

Strip back 3" of insulation from the Power Link cable which has been run through the wall, to reveal the inner conductors. Remove approximately 1/4" of insulation from each inner conductor, and twist the shield strands together to form a single conductor. The white conductor contains a separate shield coiled around a small white wire. Twist this shield to form a conductor and strip back 1/4" of insulation from the white inner conductor.

Place each of the 6 insulated conductors, plus the shield around the white wire into the holes of the terminal strip, matching the colors of the wires already connected.
Twist the remaining free hanging shield wires together and route them around the side of the terminal strip.

Plug the 8 pin plug into either one of the Power Link sockets on the MCL 2AV.



Installation of the MCL 2P amplifier

Installation guidelines

The simplest means of installing MCL 2P amplifier is to place it in the same room as the MCL 2AV and loudspeakers. The advantage of this type of installation is the ability to make all connections without running holes in walls or installing additional accessory sockets.

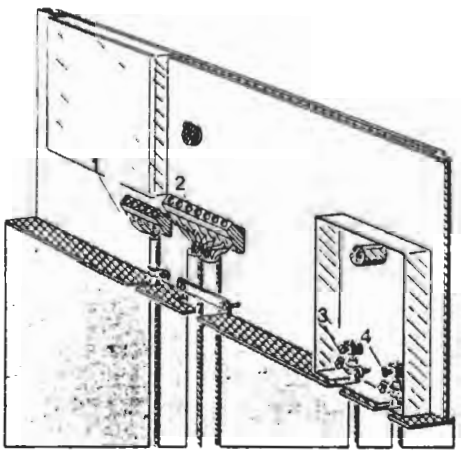
Of course, in order to make a neat installation, it is advisable to find a spot where the amplifier and the wires may be hidden (e.g., behind a curtain, in a cabinet, behind a speaker, etc.). However, the MCL 2P does generate heat, so make sure that adequate ventilation is provided.

It is also possible to conceal the MCL 2P in an attic, crawl space, or closet. Remember to provide a source of non-switched ac power to the MCL 2P during pre-construction, and to run speaker wires through the wall to the location of the speakers. It is possible to locate the MCL 2P up to 300 ft. away from its associated MCL 2AV. In this case use a separate power supply for the associated MCL 2AV.

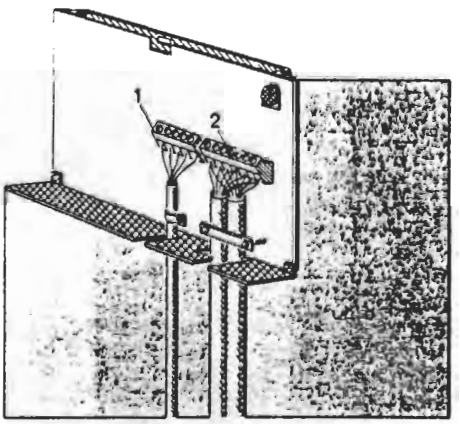
A set of wall anchors and screws is supplied for the purpose of mounting the amplifier to the wall. Locate the amplifier so that it does not interfere with the baseboard, and run the Power Link cable from the MCL 2AV, the power supply cable from the MCL 2AV, and the speaker cables to this location.

Drill two holes, approx. 11-1/8" apart horizontally as indicated in the diagram. Install the anchors and mount the amplifier with the screws provided. Plug in the speakers using 2 pin DIN speaker cables. Plug the power cable into a non-switched ac outlet.

MCL 2 AV



MCL 2 A



Installation of transceiver cable

Cut off the transceiver cable so that it fits the distance to the relay box or socket panel and strip it as shown.
Cut off the thread in the center of the cable. Connect the five colored conductors to the terminal strip #1 in the order indicated and tighten them.

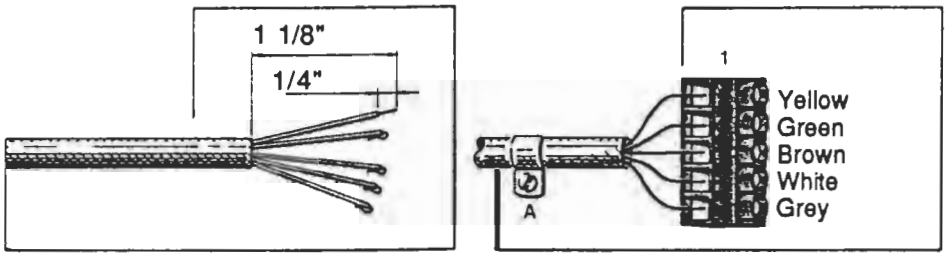
Place the cable under the strain relief bracket and tighten the screw so that the cable cannot be pulled out of the box.

Installation of 7 conductor MCL cable

Cut off the MCL cable so that it fits the distance to the relay box or socket panel and strip it as shown.
Cut off the thread in the center of the cable. Separate the wrapped shield from the white conductor and twist it so that no loose ends can short with the other conductors Connect the seven colored conductors to the terminal strip #2 in the order indicated and tighten them.

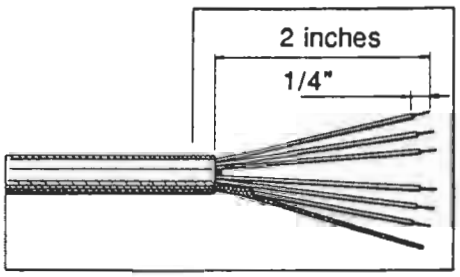
Place the cable under the strain relief bracket and tighten the screws so that the cable cannot be pulled out of the box.

Transceiver cable

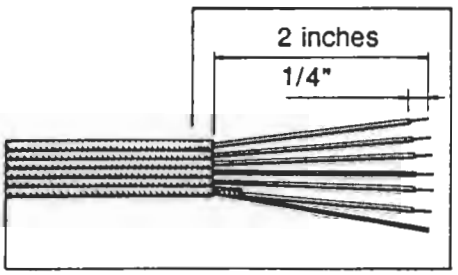


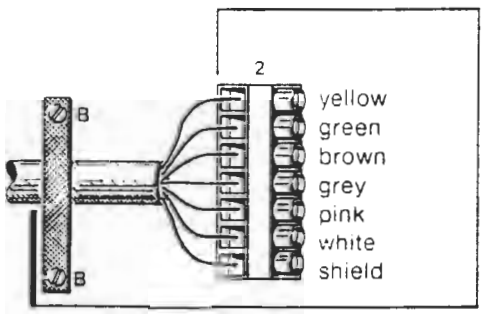
MCL cable

Round cable



Flat cable





INTRODUCTION

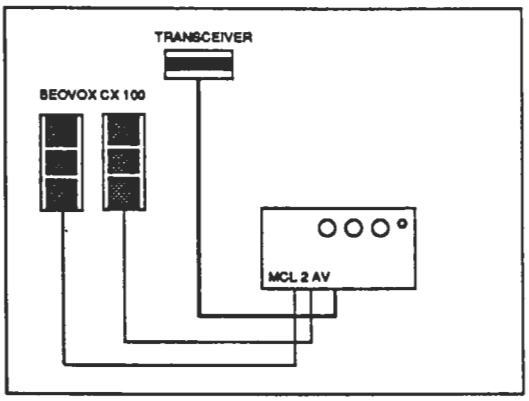
This section describes in detail how to program Bang & Olufsen components and Master Control Links to operate correctly together.

It is divided into three separate subsections:

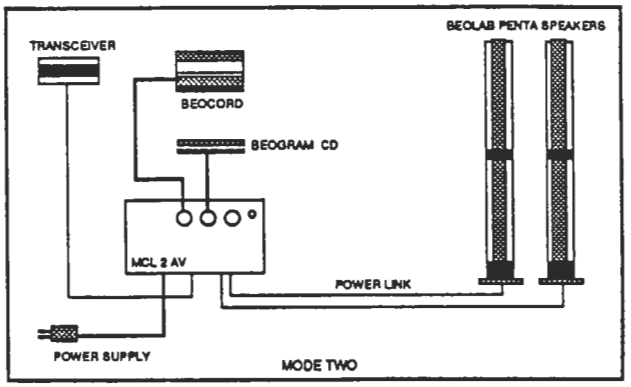
1. Pre-programming of MCL 2AV
2. Setting up System and MCL option codes.
3. Programming the MCL for global light control.

Note that each of these three programming procedures is independent of any of the others, and that in a simple installation no programming may be required at all. However, some installations will require that all three programming procedures be carried out.

To determine which programming you must do, please read the introduction to each of the subsections. It will describe in detail the situations where programming or option setting is necessary.



MODE ONE



MODE TWO

What does pre-programming of MCL 2AV do?

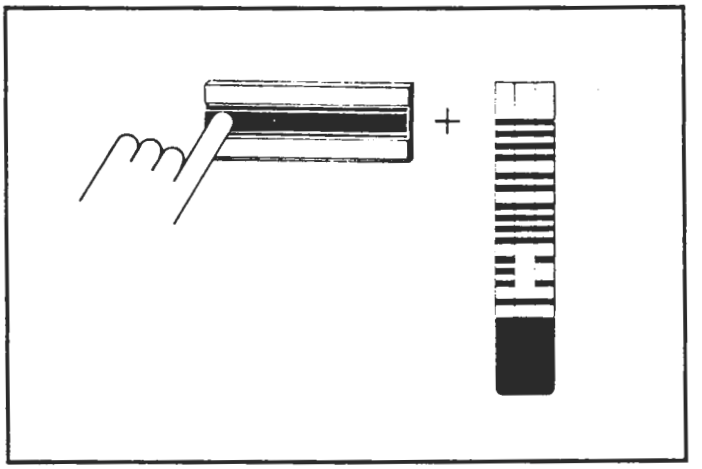
The MCL 2AV can operate in two different modes:

Mode 1 (RESET)
Passive loudspeakers may be directly connected to it and central room audio sources may be controlled. However, no local sources or independent volume control are possible. In principle this mode of operation is identical to a MCL 2ABLI.

Mode 2 (AV)
Active loudspeakers or a MCL 2P amplifier may be connected to the Power Link sockets. Local audio sources may be used. MCL 2AV gives independent volume control in the local room.

Alternately, a MX 5000 television may be connected to the AUX socket. The internal amplifier and speakers will reproduce all local and central room sources with independent volume control.

The MCL 2AV must be "told" which mode to operate in. The pre-programming function accomplishes this.



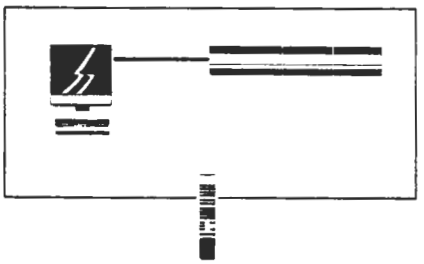
How is the MCL 2AV pre-programmed?

Pre-programming MCL 2AV for use with local sources and independent volume control. (AV Mode)
NOTE: The MCL 2AV is factory supplied in this mode.

Pre-programming requires a Beolink 1000 terminal.
Place all MCL's and all system components in STANDBY mode.
While keeping the TIMER button on the MCL 2AV transceiver depressed, press the "AV" button on the Beolink 1000. The STANDBY light on the transceiver will flash to acknowledge the command.

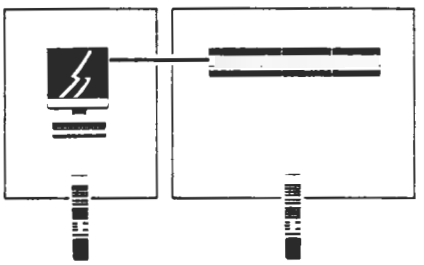
Pre-programming MCL 2AV to function as a MCL 2ABLI.
Pre-programming requires a Beolink 1000 terminal.
Place all MCL's and all system components in STANDBY mode.
While keeping the TIMER button on the MCL 2AV transceiver depressed, press the "RESET" button on the Beolink 1000. The STANDBY light on the transceiver will flash to acknowledge the command.

Option 1



The audio and video systems are placed so close to each other that the commands from the Beolink 1000 can be received by both systems at a time.

Option 2



The audio and video systems are placed far apart, e.g. in separate rooms, so that the commands from the Beolink 1000 can be received by only one system at a time.

What is Option Programming and when is it done?

Option programming adjusts the operating mode of the microcomputer in Bang & Olufsen master components containing an infrared pickup; (Beomasters, Beocenters, Beovision, MCL 2). Option programming is done whenever any two components with a infrared pickup are connected together. Examples of this are: A Bang & Olufsen audio system connected to a Bang & Olufsen video system, or a Bang & Olufsen television connected to a Master Control Link 2AV.

Why is option programming necessary?

Due to the various placement options and connection possibilities of Bang & Olufsen systems, it is necessary to program the computer in each Bang & Olufsen master component so that it can properly transfer commands to and from the master component to which it is connected.

For example, when two products with infrared pickups are in the same room; e.g., a Beovision MX 5000 and a Beomaster 5500, it is necessary to program the tv to ignore audio system commands, and the audio system to ignore tv commands. If, however, a Beovision MX 5000 and Beomaster 5500 are connected together but placed in different rooms, it will be necessary to program the infrared sensors in each product to process both audio and video infrared commands. Option programming accomplishes these operational changes.

How is option programming done?

Option programming is accomplished via the Beolink 1000 remote terminal. Only products that are Beolink compatible may be option programmed. Beolink compatible products have a "Beolink" designation on the rear panel. Option programming is done only once, unless the system setup is changed. The option is retained in the memory even in the event of power failure. Refer to the product categories mentioned in this section for specific instructions on setting options.

General information and guidelines for option programming

1. Option programming of central room **Bang & Olufsen audio and video systems** should only be carried out under the following conditions:

   A Bang & Olufsen audio and video system have been connected together via a Aux Link cable. (see section 6 for further details.

   The option programming on a stand alone Bang & Olufsen audio or video system has been changed from the factory settings.

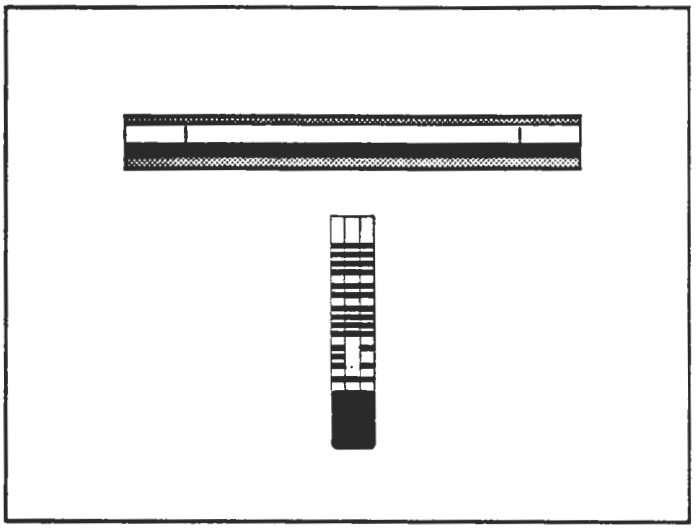
2. Option programming of **Master Control Links** should only be carried out under the following conditions:

   A Bang & Olufsen television has been installed in a local room and connected to a MCL 2AV via the Aux input on the front panel.

   The option settings on the MCL 2ABLI or 2AV have been changed from their original factory settings.

3. Option programming of audio systems and Master Control Links can only be carried out using a Beolink 1000 terminal with the **entire system in STANDBY.**

4. The Options which have been programmed into two interconnected products (e.g., a video system and an audio system), must be the same.

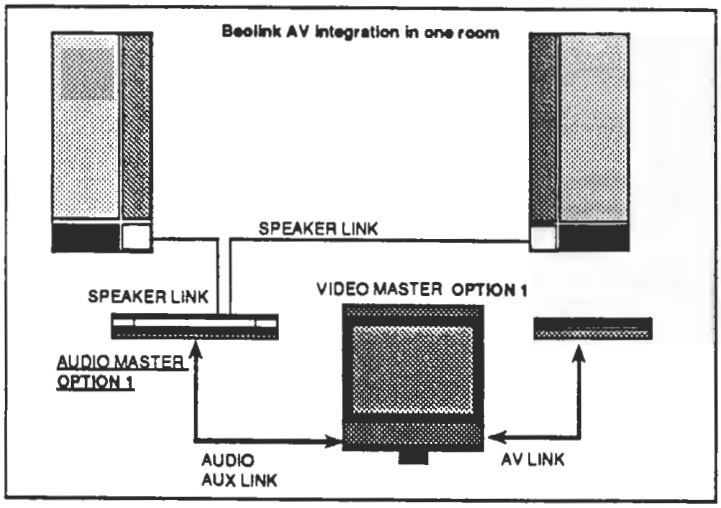


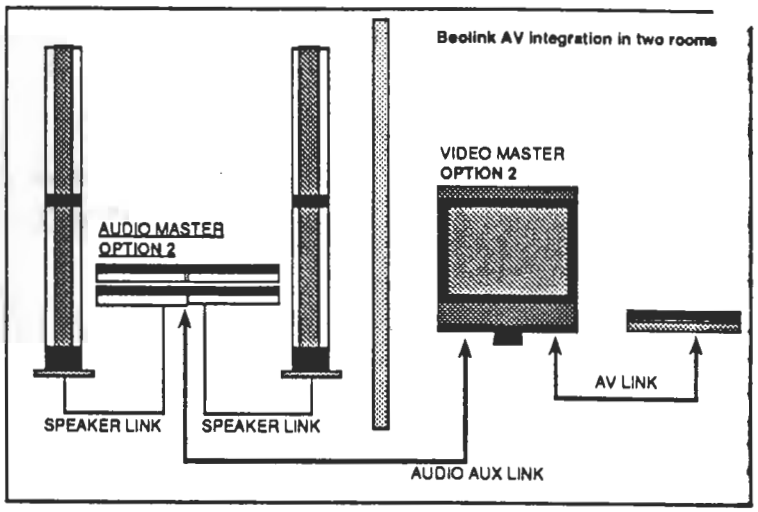
SETTING AUDIO SYSTEM OPTION CODES

NOTE: The factory setting of audio systems is Option 1 (1.5 for BS 4500)

Place the Beomaster or Beocenter in STANDBY mode. Press the following buttons on the Beolink 1000: SOUND/ 1 or 2 (desired option)/STORE.

Beomaster 4500 only: When option programming is done on the Beomaster 4500 the correct option will be displayed on the receiver. The second number displayed must be 5.
If the second number is 6, press SOUND/5/STORE.





EXPLANATION OF AUDIO SYSTEM OPTIONS

OPTION 1(factory setting)

Option 1 is used when the audio system is by itself, or when it is connected to a Bang & Olufsen video system which is located in the same room. Make sure the MX 5000 is set to Option 1 as well.

OPTION 2

Option 2 is used when a Bang & Olufsen audio system is connected to a Bang & Olufsen video system via a Aux Link cable, but the two systems are in separate rooms. Remember to set the television to Option 2 as well.

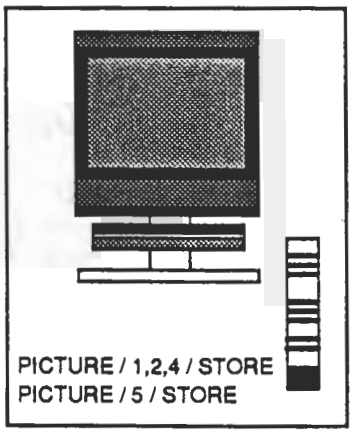
OPTION 5

Beosystem 4500 only. The factory setting. Used under all circumstances.

OPTION 6

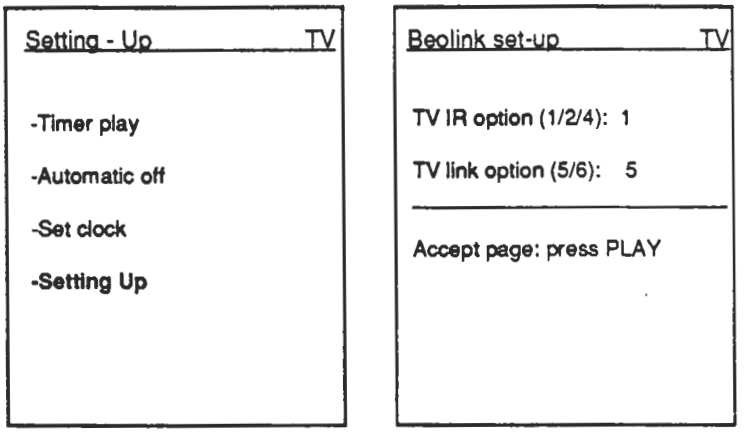
Beosystem 4500 only. For future application. Option 6 disables the datalink connection to Beolab speakers and MCL's.

METHOD ONE



OR

METHOD TWO

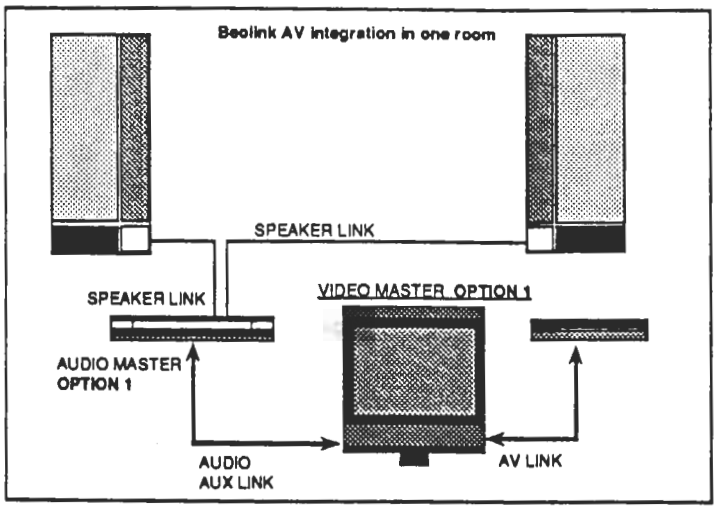


SETTING VIDEO SYSTEM OPTION CODES

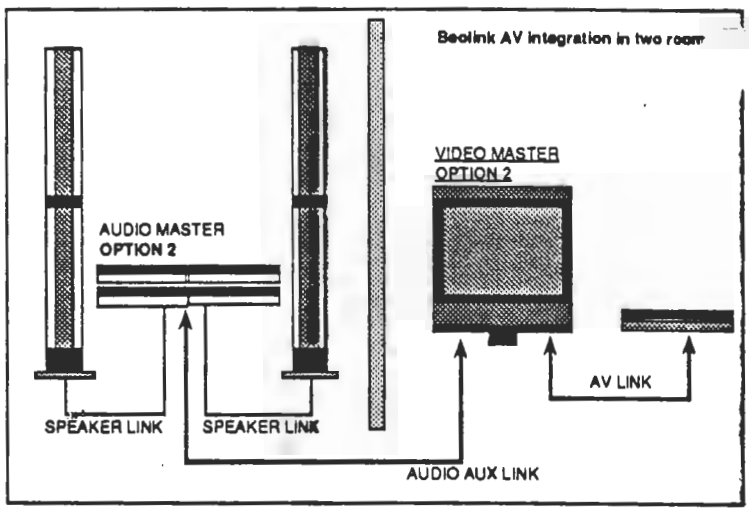
NOTE: The factory setting of the MX 5000 is Option 1.5

Method 1: Place the TV in STANDBY mode. Press the following buttons on the Beolink 1000: PICTURE/1,2, or 4 (desired option)/STORE. Then PICTURE/ 5 /STORE

Method 2: (Refer to pages 24 -28 of the Video System 5000 owner's manual for futher details.) Select the "Setting up" item in the main TV menu. The "Setting up" submenu will appear. Select the item "Beolink setup".
Set the appropriate TV IR option (1/2/4), and the appropriate TV Link option (5). Link option 6 is for future applications.



OPTION ONE



OPTION TWO

EXPLANATION OF VIDEO SYSTEM OPTIONS

OPTION 1

Option 1 is the factory set option on the MX 5000. It is used when the video system is by itself, or when it is connected to a Bang & Olufsen audio system which is located in the same room. Remember to set the audio system to Option 1 as well.

Option 1 is also used when a second MX 5000 is connected to a MCL 2AV with transceiver and active speakers or MCL 2P attached.

OPTION 2

Option 2 is used when a Bang & Olufsen MX 5000 is connected to a Bang & Olufsen audio system via a Aux Link cable, but the two systems are in separate rooms. Remember to set the audio system to Option 2 as well.

Option 2 is also used when a second MX 5000 is connected to a MCL 2AV and is used as the local room amplification instead of active speakers or MCL 2P.

OPTION 4

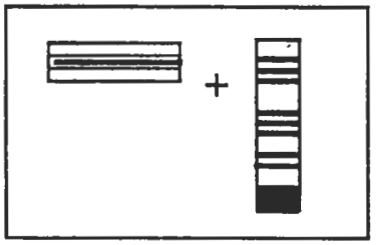
For future applications

OPTION 5

Option 5 is used in all present applications, and is the factory setting.

OPTION 6

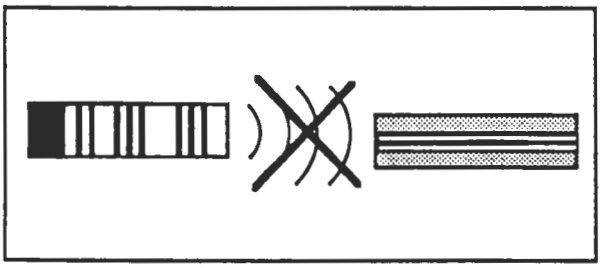
For future applications.



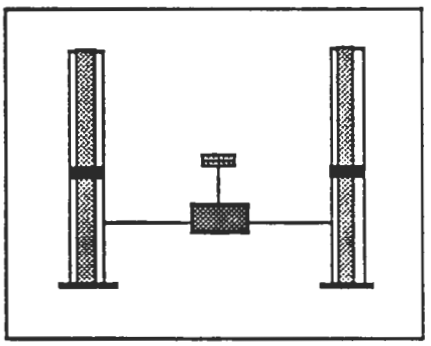
SETTING MCL 2 ABLI OPTION CODES

Note: The factory setting of MCL 2ABLI is Option 2

Place the entire system (all components and all links) in STANDBY mode. Press the following buttons on the Beolink 1000 terminal: LINK/0,1,2 (desired option)/STORE.



OPTION 0



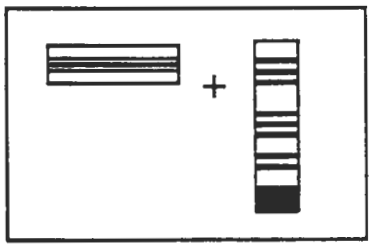
OPTION 1 & 2

EXPLANATION OF MCL 2ABLI OPTIONS

OPTION 0
Disables the infrared sensor. Mute and timer buttons still operate.

OPTION 1
Disables control of the central room Bang & Olufsen video system functions. If the TV or V.TAPE buttons on the Beolink 1000 are pressed in a link room, no activation of the main room video components will occur. No sound from the video components will be available in the local room. If this "lockout" function is not desired, use Option 2.

OPTION 2 (factory setting)
Provides normal MCL 2 ABLI operation.
Used in "audio only" MCL systems.
Allows control of all central room components from the local room.



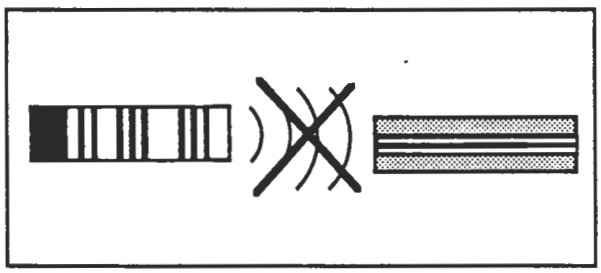
SETTING MCL 2AV OPTION CODES

NOTE: The factory setting of MCL 2AV is Option 2.5

NOTE: Options other than #2 presuppose that MCL 2AV is used in "AV" mode. Refer to this section under Pre-programming MCL 2AV.

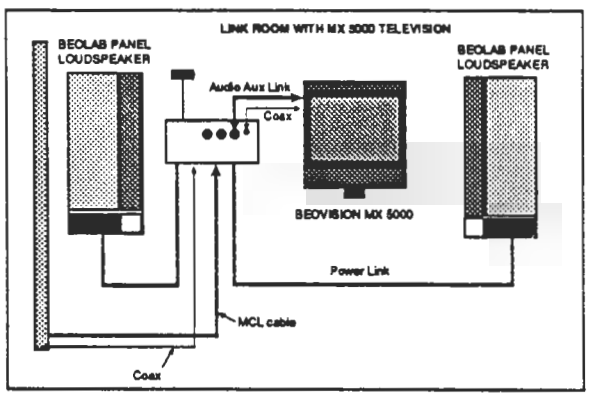
Place the entire system (all components and all links) in STANDBY mode. Press the following buttons on the Beolink 1000 terminal:
LINK/0,1,2(desired option)/STORE.
Then press LINK/5 or 6 (desired option)STORE.

EXPLANATION OF MCL 2AV OPTIONS



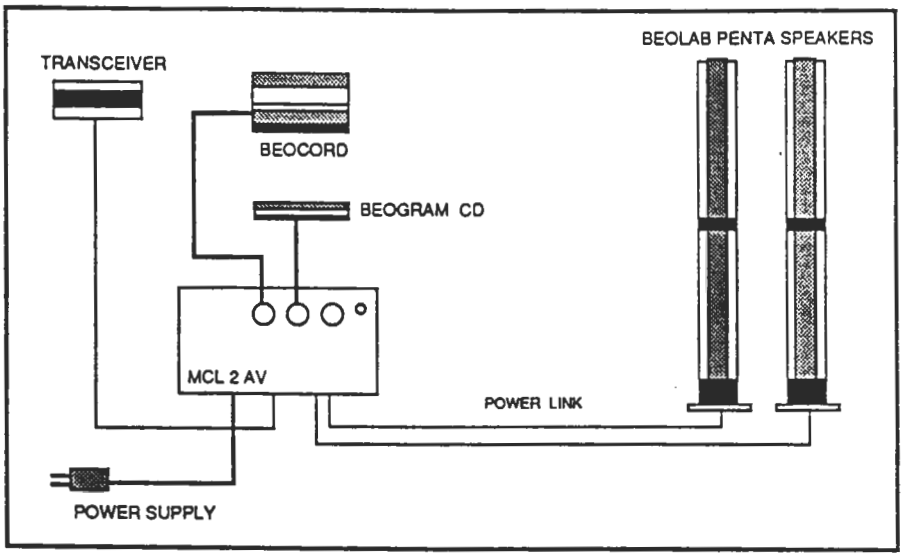
OPTION 0

Disables the infrared sensor. Mute and timer buttons still operate.



OPTION 1

Used only when a Beovision MX 5000, a MCL transceiver, and active loudspeakers or MCL 2P are connected to MCL 2AV. Link transceiver and MX 5000 must be in the same room. Remember to set MX 5000 television in local room to Option 1 and Link Option 5.



OPTION 2 (Factory setting)

Option 2 is used when MCL 2AV is pre-programmed as a MCL 2ABLI.

Option 2 is used whenever a MCL2AV is used in "AV" mode; i.e., connected to active loudspeakers or MCL 2P for independent volume control. NOTE: This holds true with or without local room audio sources.

Option 2 is used when a MX 5000 is connected to a MCL 2AV, but no active loudspeakers or MCL 2P are connected to the MCL 2AV (the amplifier and speakers in the television are used reproduce all audio and video sound).

NOTE: Option 2 is automatically selected if a transceiver is not connected to the MCL 2AV, and the infrared sensor of the tv is used. However, the MX 5000 must be manually programmed to Option 2.

NOTE: Options 5 & 6 are set <u>in addition</u> to the above options.

Option 5 (factory setting)

Option 5 is used in all cases, except the special case mentioned under Option 6

Option 6 (to be used only in conjunction with Option 2)

Used only when a Bang & Olufsen Audio/Video system is installed in the central room <u>and</u> a second MX 5000 is installed with a MCL 2AV in a local room. In all other cases select Option 5.

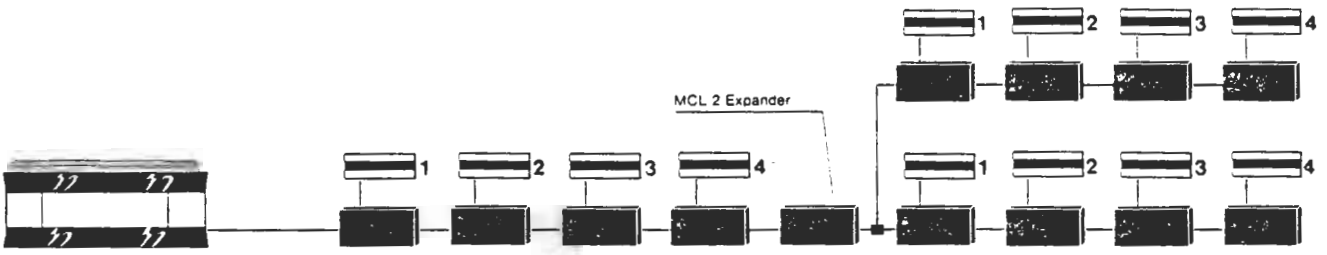
Option 6 is a special option to be used only when a MX 5000 television is connected to a MCL 2AV in a local room without additional speakers or amplifiers. Option 6 also requires that a transceiver be used with the MCL 2AV.

When Option 6 is selected the following change in local room operation occurs:

When the buttons LINK/V.TAPE are pressed, the central room Bang & Olufsen VCR will be selected. The sound reproduced through the television in the local room will be mono via the rf connection, not stereo via the audio system. This frees the central audio system to be used for audio programs while a video program is being watched in the local room.

If you wish to always have stereo VCR sound through the local room tv set when the central room VCR has been accessed (LINK/V.TAPE), use Option 5.

IMPORTANT NOTE FOR OPTION SETTING OF MX 5000: Even in the case of Option 6 setting of MCL 2AV, use TV Link Option 5 under all circumstances.



Programming the MCL 2 transceiver for light control.

Both MCL 2ABLI and MCL 2AV will pass light control commands from room to room via the transceiver. This allows control of lights in any room equipped with a LC 1 light control and MCL from any other room with an MCL 2.
If global light control is desired from the central room, a MCL 2ABLI must be installed in that room.
NOTE: Global light control is not possible with the old MCL 2A type 2045.

In order to ensure correct transmission of commands, each transceiver must be programmed with a function code from 1-4. It is not important which code is used for which MCL, only that two rooms which are adjacent have different codes. This prevents misoperation of the Light Control system. Each code may be used up to 3 times, allowing a total of 12 rooms with global light control.

Programming of lamps

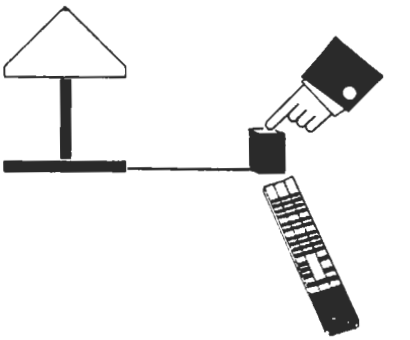
Before the light control system is taken into use, the individual lamps have to be programmed.

Programming is carried out by holding a finger on the stainless plate at the top of the LC 1 unit in question while at the same time pressing the indicated button sequences on the Beolink 1000.

Numbering of lamps:
Each lamp in a room has to be allocated a number from 1 to 9.

Press [SHIFT] [LINK] [GO TO] + the number you want + [STORE]

All LC 1 units are allocated the number 1 when leaving the factory.

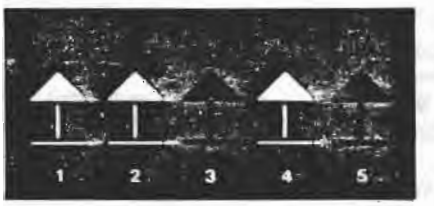


Local light control

Local light control means control of lamps in the same room.

- In order to switch on all lamps in the room, press [SHIFT] [LINK] [PLAY]
- In order to switch off all lamps in the room, press [SHIFT] [LINK] [STOP]
- A lamp can also be switched on or off by touching the stainless plate at the top of the LC 1. The lamp is then switched on at 75% intensity.

Light picture no. 1:



A local light picture is a group of lamps which are switched on at the same time. Each lamp in the group is switched on at an individually set intensity.

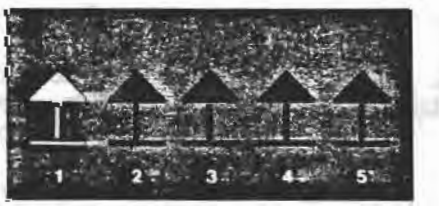
A local light picture is activated by pressing [SHIFT] [LINK] + *the number of the light picture* (1 - 9).

[STOP] will switch the light picture off; [PLAY] will switch the same light picture on.

[△], [▽] increases or reduces the intensity of the whole light picture.

Only *one* light picture at a time can be on in one room. If another light picture is switched on, the first will be switched off.

Lamp no. 1:



A single lamp is switched on by pressing [SHIFT] [LINK] [GO TO] + *the number of the lamp* (1 - 9). The lamp switches on at 75% intensity.

One lamp can be incorporated in several local as well as global light pictures.

It is possible to operate the individual lamps even if they are incorporated in a local or a global light picture.

Lamps which have thus been switched on individually are not switched off even if the light picture in which they are incorporated is switched off.

Global light control

Global light control means control of lamps in several rooms. Global light control is only possible if a Master Control Link 2 system is installed.

- In order to switch on all lamps in the house:
  press [LINK] [SHIFT] [LINK] [PLAY]
- In order to switch off all lamps in the house:
  press [LINK] [SHIFT] [LINK] [STOP]

LINK — SHIFT — LINK — 1

Global light picture no. 1:

A global light picture is a group of lamps in several different rooms which are switched on at the same time. Each lamp in the global light picture is switched on at an individually set intensity.

A global light picture is switched on by pressing [LINK] [SHIFT] [LINK] + the number of the *global light picture* (1 - 9).

[STOP] will switch off the light picture; [PLAY] will switch on the same light picture.

It is not possible to increase or reduce the intensity of a global light picture.

Only *one* global light picture at a time can be on. If another light picture is switched on, the first will be switched off.

Presetting of local and global light pictures

Each light picture must be allocated a number from 1 to 9. One system will accommodate up to 9 local light pictures in each room and 9 global light pictures.

A light picture is created by first setting the light intensity level of each lamp individually and then storing collectively the light picture thus created.

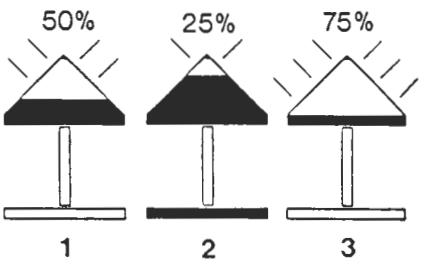
Example: light picture 1

Lamp no. 1:
Press [SHIFT] [LINK] [GO TO] [1] [△] [▽]

Lamp no. 2:
Press [SHIFT] [LINK] [GO TO] [2] [△] [▽]

Lamp no. 3:
Press [SHIFT] [LINK] [GO TO] [3] [△] [▽]

Then store the light picture as number 1:
Press [SHIFT] [LINK] [STORE] [1] [STORE]



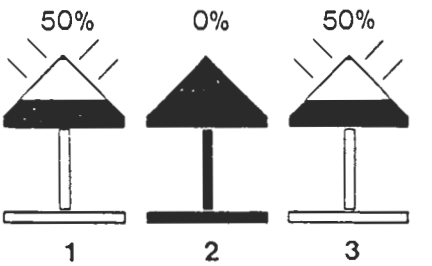
Example: light picture 2

Lamp no. 1:
Press [SHIFT] [LINK] [GO TO] [1] [△] [▽]

Lamp no. 2 (switched off):
Press [SHIFT] [LINK] [GO TO] [2] [STOP]

Lamp no. 3:
Press [SHIFT] [LINK] [GO TO] [3] [△] [▽]

Then store the light picture as number 2:
Press [SHIFT] [LINK] [STORE] [2] [STORE]



Global light pictures are created in the same way by first setting the light intensity level of each lamp individually and then storing collectively the light picture thus created.

The global light picture is stored as follows:
Press [LINK], and then [SHIFT] [LINK] [STORE] + the number of the light picture + [STORE]

The global light picture can be stored in one operation through any Master Control Link 2 transceiver, or in several operations, that is in each room that is incorporated in the light control system. *Only remember that the global light picture must be intact in all rooms throughout the procedure!*

INTRODUCTION

The purpose of this section is to acquaint you with the way in which Bang & Olufsen products connect together. In most cases the connection between products requires no more than one cable, which contains analog signals, data signals, and in some cases, dc supply voltages.

Bang & Olufsen uses special terminology to define the connection or "link" between products. For example, the connection between a MX 5000 television and a Beomaster receiver is known as "Audio Aux Link".

Each type of connection or "link" uses a specific type of cable and a specific pin configuration for the plug. All plugs and cables are DIN standard.

This section explains in detail the signals, cables, plug configurations, and the socket locations for each of the product "link" connections. Further details about specific pin connections and color coding of cables may be obtained by consulting the wiring configurations in Section 7.

MASTER CONTROL LINK

The Master Control Link connection originates at the speaker #2 output sockets of the Beomaster/Beocenter. Connection from this point is made to the MCL 2ABLI or MCL 2AV relay box via a special 7 conductor cable, with 3 pin speaker plugs on one end, and bare wires on the other end. (See section 9 for a complete listing of cables and accessories.)

SIGNALS

The Master Control Link cable carries speaker level signals, left and right. Along with the speaker signals, a two-way data signal is carried for communication purposes between main room and local room, as well as display data for Beolab Penta or Beolab Panel speakers. The Beomaster/Beocenter also supplies 7 volts dc which is transferred via the link cable to the relay box. This power source is used only by the MCL 2ABLI. The MCL 2AV receives its power either from a separate power supply, or from the MCL 2P amplifier.

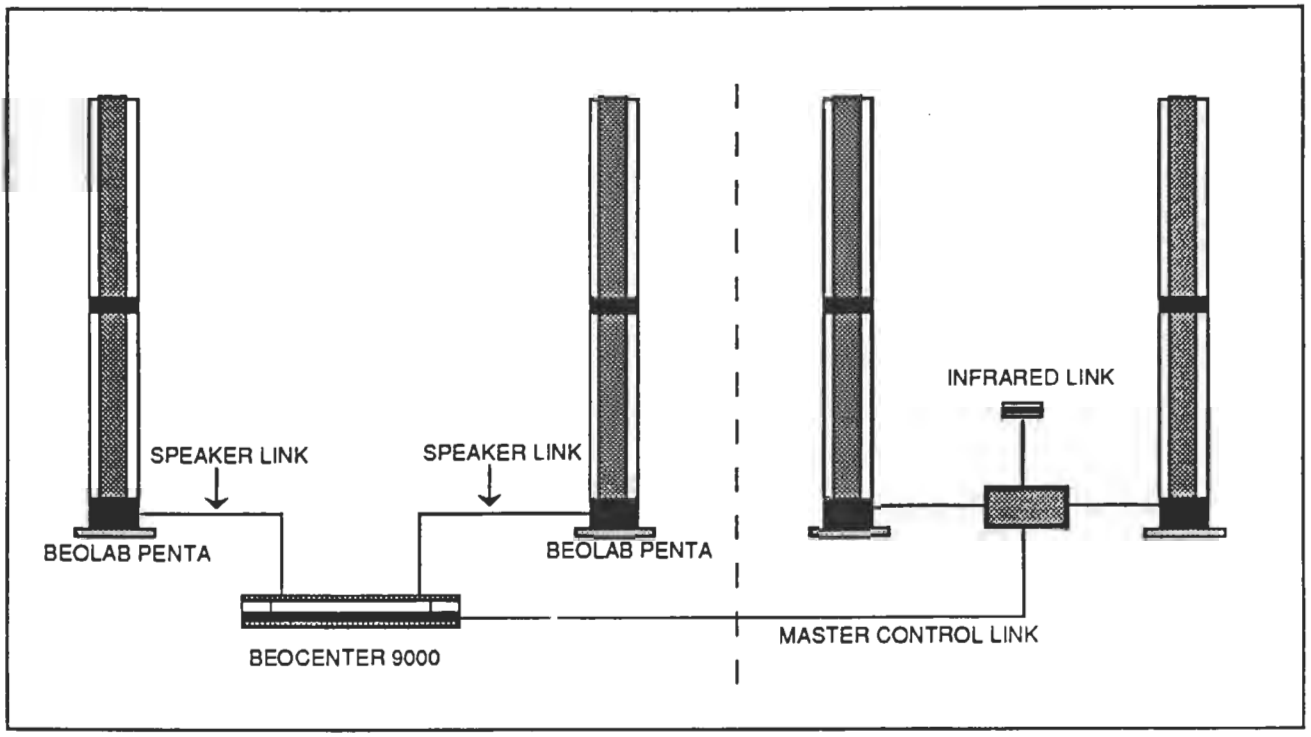
SPEAKER LINK

Speaker Link defines the connection between a Beomaster/Beocenter Speaker 1 output and a pair of active or passive speakers in the main room.

SIGNALS

(refer to the socket diagram in this section)
Audio signals are transferred at speaker level. The top pin of the socket is the speaker "hot", the blade is speaker ground. The bottom pins are used to transfer data and data ground from the Beomaster/Beocenter to Beolab Penta/Panel speakers.

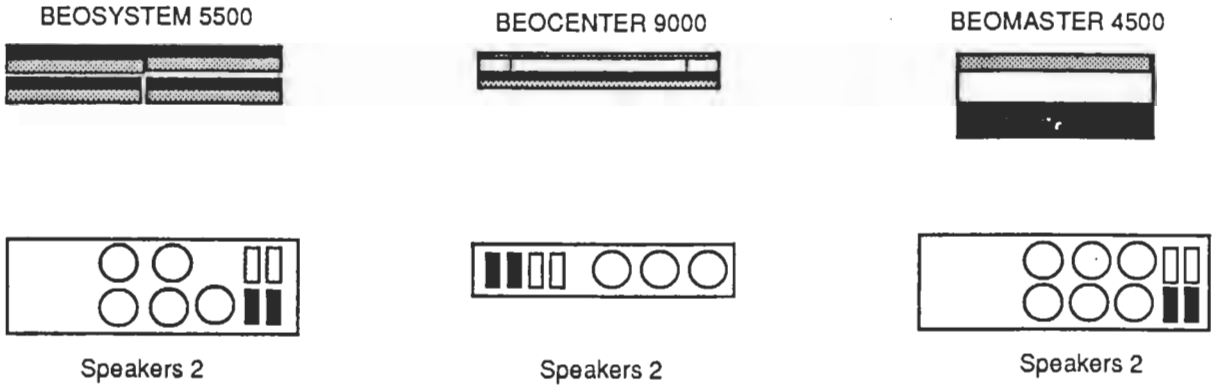
Connection to Beolab speakers via speaker link must be done with shielded speaker cables.



MASTER CONTROL LINK & SPEAKER LINK

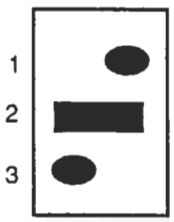
Master Control Link

MCL Cables and Sockets

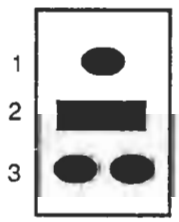


Master Control Link MCL 2AV and MCL 2A

MASTER CONTROL LINK SOCKETS



Cable to Beomaster:
1 Audio
2 Chassis
3 Data or + 7V



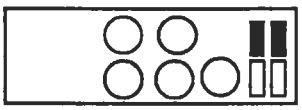
Socket for Beovox/Beolab:
1 Audio
2 Chassis
3 Display Data
4 Display Chassis

MASTER CONTROL LINK CABLES

To Beomaster

6270266	5 ft.
6270267	16 ft.
6270268	32 ft.
6270269	48 ft.
6270270	65 ft.
6270271	96 ft.

BEOSYSTEM 5500

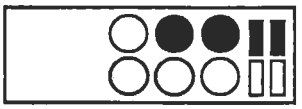


Speakers 1

BEOCENTER 9000

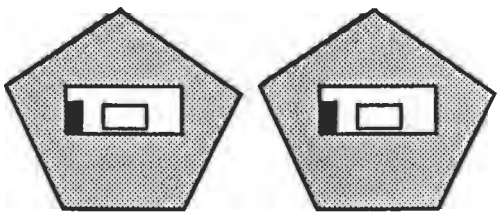
Speakers 1

BEOMASTER 4500

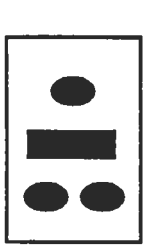


Speakers1

BEOLAB PENTA



SPEAKER LINK SOCKET

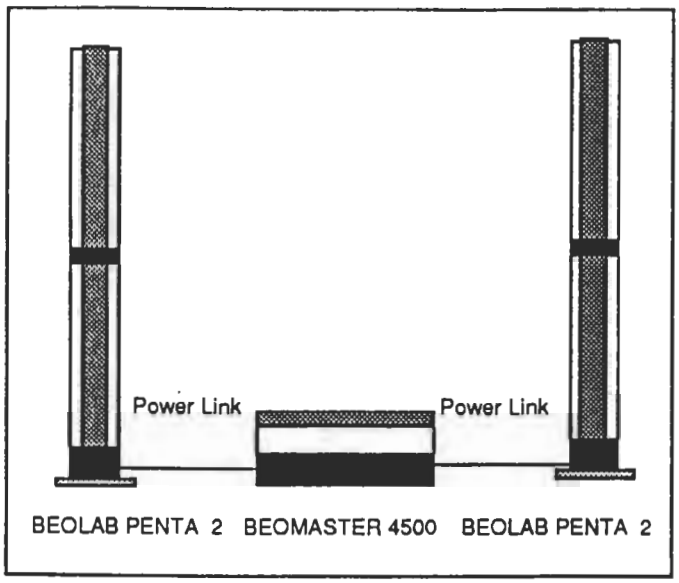


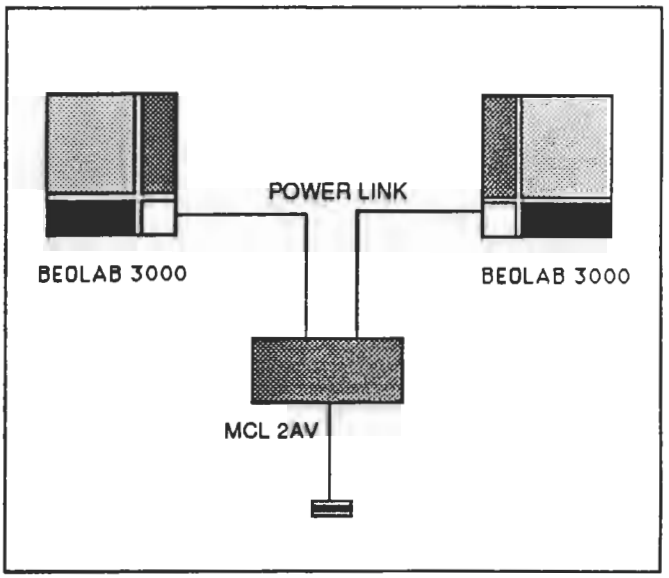
1 Audio
2 Chassis
3 Display Data
4 Display Chassis

SPEAKER LINK CABLES

Beolab Penta:

12 ft.	6270336
30 ft.	6270352





POWER LINK

Power Link defines the connection between a Beosystem or MCL 2AV with 8 pin DIN Power Link sockets, and Beolab Penta 2/ Beolab Panel loudspeakers or the MCL 2P power amplifier.

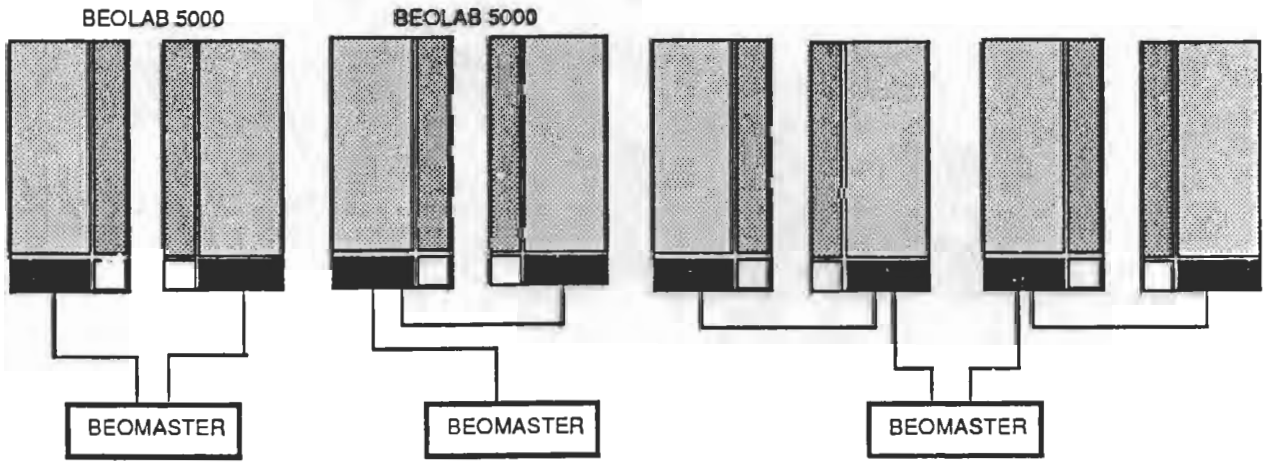
SIGNALS

(refer to socket diagram in this section)

The Power Link connection carries both left and right preamp output signals. Additionally, the Power Link connection transfers data signals for the Beolab Penta and Panel status display. The remaining connections provide turn-on and protection signals (APHC) for the amplifier.

Power Link outputs may be adapted to standard RCA outputs for driving non B & O power amplifiers using a DIN to RCA adapter no. 6270316

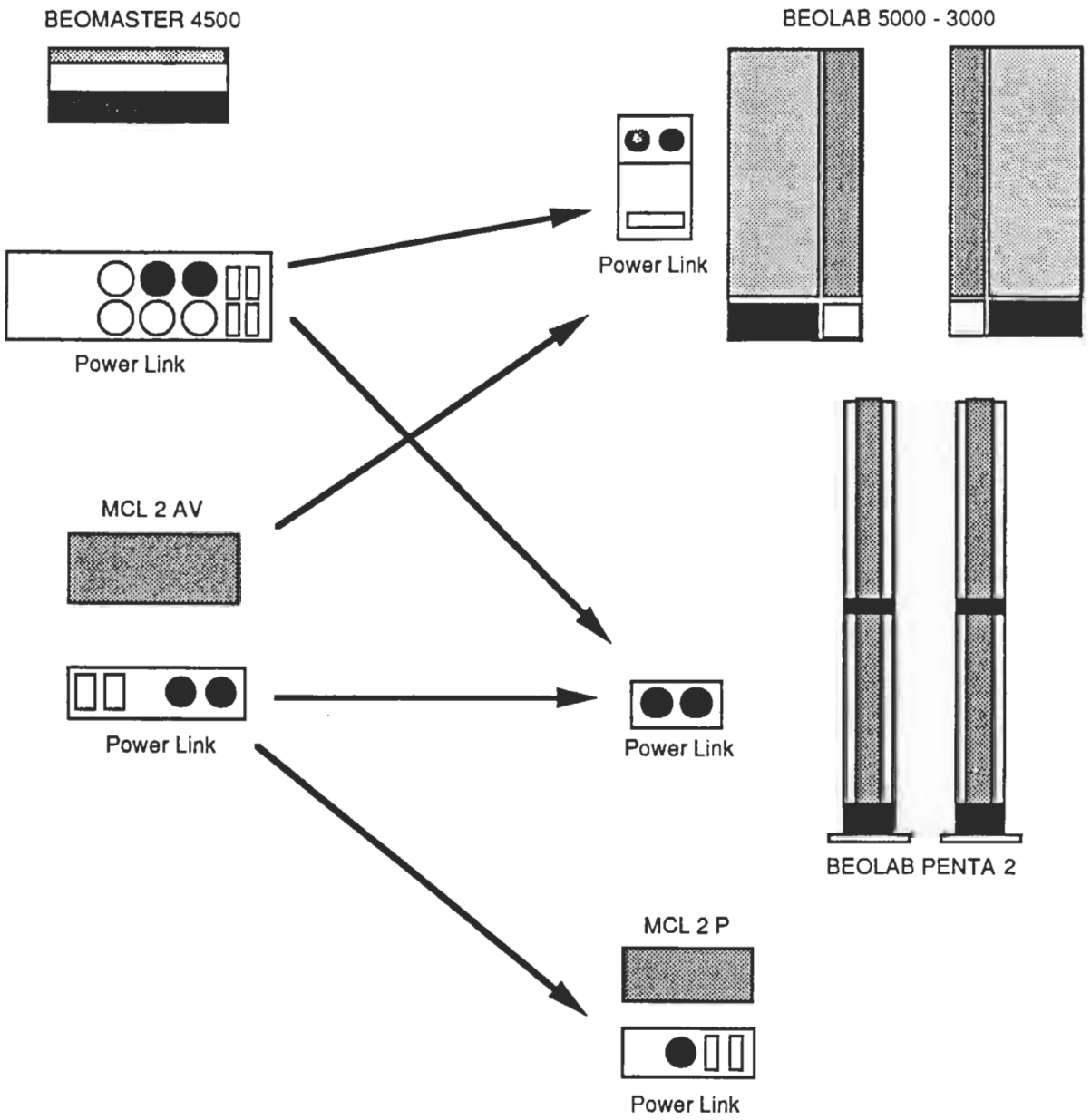
The remote mains switch may be activated by the power link outputs using DIN to DC female adaptor no. 9627100



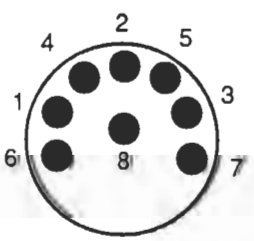
Beomaster or MCL 2A to Beolab speakers: examples of Power Link connection.

Power Link to Beolab 5000-3000 and Beolab Penta 2

Cables and Sockets



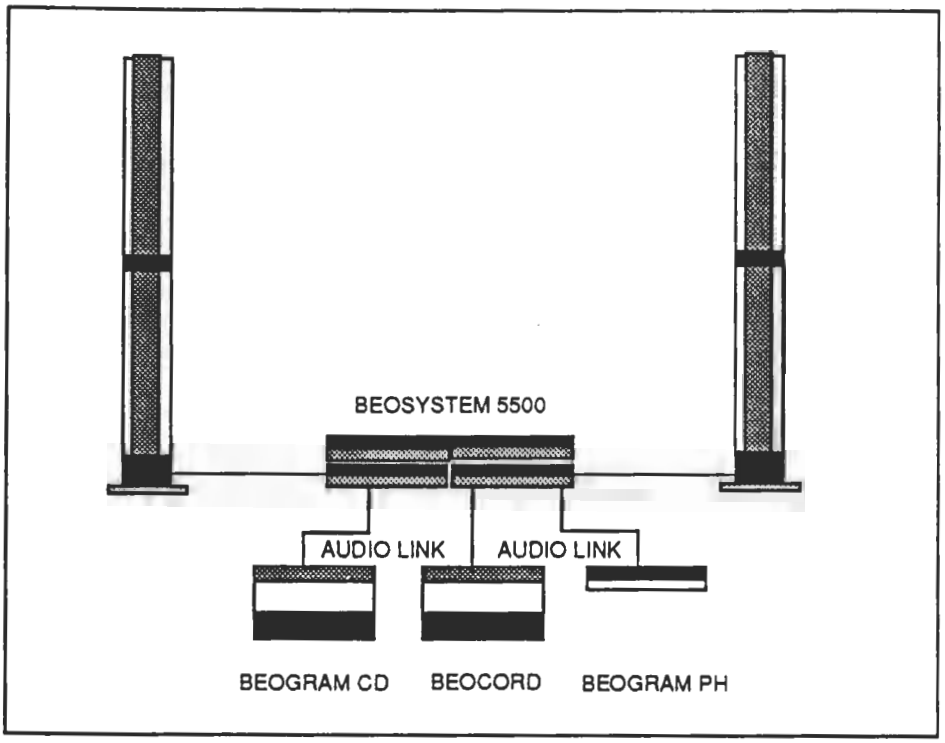
POWER LINK SOCKET



1 Start up
2 Signal chassis
3 Left
4 Speaker On
5 Right
6 Datalink
7 Datalink chassis
8 Overload

POWER LINK CABLES

8 ft.	62704417
16 ft.	62704418
32 ft.	62704419



AUDIO LINK

Audio link connections are those which take place between an Audio Master (Beomaster or Beocenter) and its program sources: Beocord, Beogram turntable, and Beogram CD.

SIGNALS: BEOGRAM TURNTABLES AND CD PLAYERS

(Refer to the socket diagrams in this section)
Both analog stereo signals and two way datalink codes for operation and display are transferred. For Beogram turntables and CD players the analog signals are one way, from the source to the Master. These signals terminate at pin 3 (left) and pin 5 (right) of a 7 pin DIN plug. Pin 2 is the signal ground. Beogram 5500 and 9000 transfer signals at Phono level. All other products transfer signal at line level.

With Beogram turntables (except Beogram 4500) the outside ring of the 7 pin plug is the turntable chassis ground, which also serves as the ground return for the data signal. NOTE: In the event a phono cable is extended using cable no. 6270338. a ground wire must be added between the chassis of the turntable and the chassis of the Beomaster/Beocenter.

SIGNALS: BEOCORD AUDIO

In addition to the above, audio signals are transferred to the Beocord from the audio master for the purpose of recording. These signals take place at pin 1 (left) and pin 4 (right) of the 7 pin DIN plug. All signals are at line level.

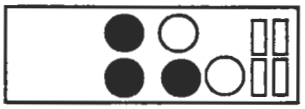
Beocord signal cables may be extended via extension cable no. 6270338.

BEOSYSTEM 5500

BEOCENTER 9000

BEOMASTER 4500

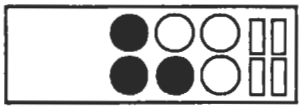
PH



CD TAPE

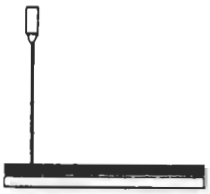
TAPE 2 PH

PH / TP 2



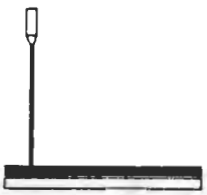
CD TP 1

CD



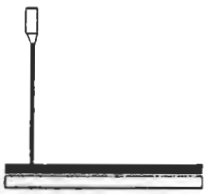
Beogram CD

Tape



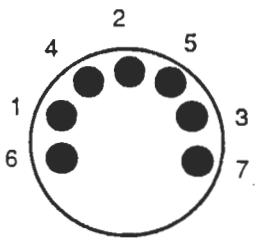
Beocord

PH



Beogram PH

AUDIO LINK SOCKET



1 Recording left
2 Chassis
3 Playback left
4 Recording right
5 Playback right
6 Datalink
7 Datalink

AUDIO LINK CABLES

Beogram CD
Cable with two plugs: 6270213, or fixed cable with one plug.

Beocord
Fixed cable with one plug.

Beogram PH
Fixed cable with one plug.

Extension cable: 6270338.

* Extra ground wire required for Beogram turntable.

AUDIO AUX LINK

Audio Aux Link is the connection between a Bang & Olufsen MX 5000 television and a Bang & Olufsen Beolink compatible audio system. This connection is also known as a Beolink connection.

SIGNALS

Both analog stereo sound signals and two way datalink codes for operation and display are transferred. Audio signals are in two directions. This gives the ability to play audio signals from the video system through the audio system, as well as allowing programs from the audio system to be played through the MX 5000 tv set.

The Audio Aux Link connection also permits sound from the VX 5000 VCR to be played through the audio system, and sound from the audio system to be recorded on the VX 5000. This connection takes place automatically whenever a VX 5000 is connected to a MX 5000.

In practice, the Audio Aux Link connection is identical to the Audio Link connection for Beocord audio. Therefore, the same types of cables and extensions which are used for two way Audio Link connections may be used for Audio Aux Link connections.

AV LINK

AV link describes the connections between the MX 5000 TV and the VX 5000 VCR.

SIGNALS:

The AV link transfers audio, video and data signals between the MX 5000 TV and VX 5000 VCR. A special cable with 21 pin "Scart" plug on each end is used to accomplish the AV link connection.

Audio signals are transferred in both directions between TV and VCR. This allows sound recording from the audio system via the Aux Link connection to the TV set, as well as playback of stereo sound from the VCR through the TV or the audio system.

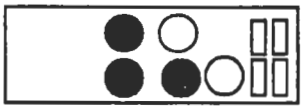
Composite video signals are transferred from the TV to the VCR. This allows recording from a second vcr, camcorder, or other video source.

BEOSYSTEM 5500

BEOCENTER 9000

BEOMASTER 4500

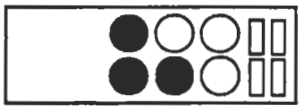
PH



CD TAPE

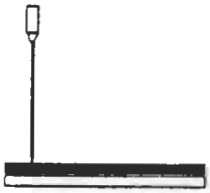
TAPE 2 PH

PH / TP 2



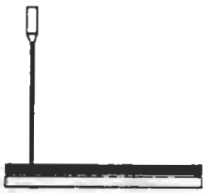
CD TP 1

CD



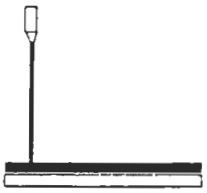
Beogram CD

Tape



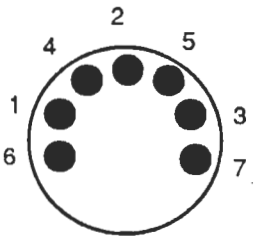
Beocord

PH



Beogram PH

AUDIO LINK SOCKET



1 Recording left
2 Chassis
3 Playback left
4 Recording right
5 Playback right
6 Datalink
7 Datalink

AUDIO LINK CABLES

Beogram CD
Cable with two plugs: 6270213, or fixed cable with one plug.

Beocord
Fixed cable with one plug.

Beogram PH
Fixed cable with one plug.

Extension cable: 6270338.

* Extra ground wire required for Beogram turntable.

AUDIO AUX LINK

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The Audio Aux Link connection also permits sound from the VX 5000 VCR to be played through the audio system, and sound from the audio system to be recorded on the VX 5000. This connection takes place automatically whenever a VX 5000 is connected to a MX 5000.

In practice, the Audio Aux Link connection is identical to the Audio Link connection for Beocord audio. Therefore, the same types of cables and extensions which are used for two way Audio Link connections may be used for Audio Aux Link connections.

AV LINK

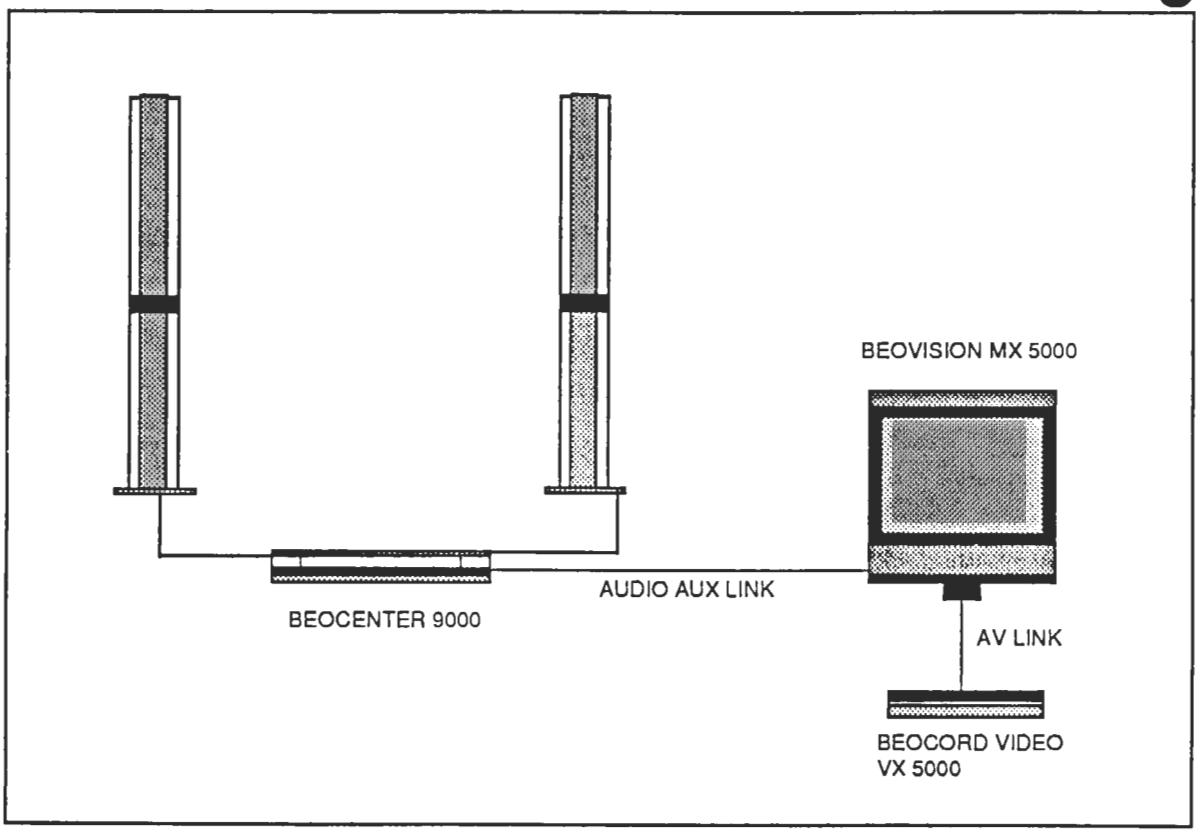
AV link describes the connections between the MX 5000 TV and the VX 5000 VCR.

SIGNALS:

The AV link transfers audio, video and data signals between the MX 5000 TV and VX 5000 VCR. A special cable with 21 pin "Scart" plug on each end is used to accomplish the AV link connection.

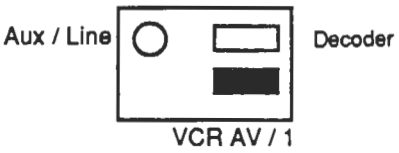
Audio signals are transferred in both directions between TV and VCR. This allows sound recording from the audio system via the Aux Link connection to the TV set, as well as playback of stereo sound from the VCR through the TV or the audio system.

Composite video signals are transferred from the TV to the VCR. This allows recording from a second vcr, camcorder, or other video source.



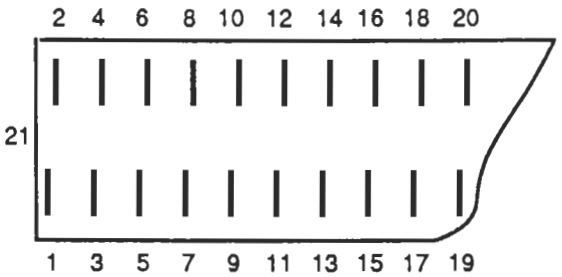
AV LINK & AUDIO AUX LINK

BEOVISION MX 5000



BEOCORD VIDEO VX 5000

BANG & OLUFSEN AV LINK



1 Audio out R
2 Audio in R
3 Audio out L
4 Ground
5 Ground
6 Audio in L
7 Blue
8 Data
9 Ground
10 Ground
11 Green
12 Chroma C
13 Ground
14 Luminance Y
15 Red
16 Fast blanking
17 Ground
18 Ground
19 Video out
20 Video in
21 Sheild

AV CABLES

With all signals and control data - TV to VCR

5 ft	6720505
16 ft	6270508
48 ft	6270506

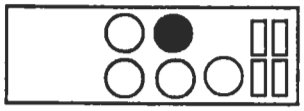
Audio Aux Link

BEOSYSTEM 5500

BEOCENTER 9000

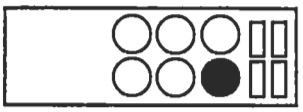
BEOMASTER 4500

PH

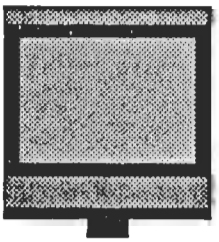


Tape 2/Aux

Aux



Aux/Tv

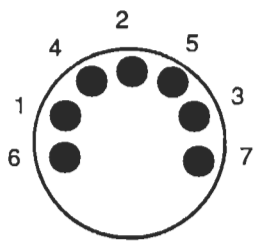


BEOVISION MX 5000

TV/Aux

CONNECTIONS 6

AUDIO / TV LINK SOCKET



	AUDIO SYSTEM:	TV:
1	Left out	Left in
2	Chassis	Chassis
3	Left in	Left out
4	Right out	Right in
5	Right in	Right out
6	Datalink	Datalink
7	Datalink	Datalink

AUDIO AUX LINK CABLES

	BLACK
5 ft.	6270222
16 ft.	6270353
32 ft.	6270337
65 ft.	6270354

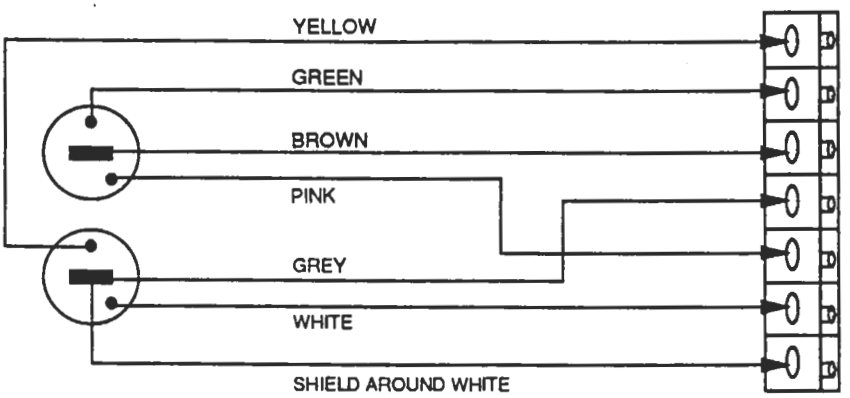
Extension cable 5 ft.: 6270338

MODEL	AUDIO LINK	A V LINK	AUDIO AUX LINK	POWER LINK	SPEAKER LINK	MASTER CONTROL LINK
BEOMASTER/BEOCENTER						
BM 4500	•		•	•	•	•
BM 5500	•		•		•	•
BM 6500	•		•	•	•	•
BC 9000	•		•		•	•
BC 9500	•		•	•	•	•
BEOCORD TAPE RECORDER						
BE 3300/4500	•					
BE 5500/6500	•					
BEOGRAM TURNTABLE						
BG 4500	•(built-in phono preamp)					
BG 6500	•(built-in phono preamp)					
BG 3300/5500	•					
BG 9000/9500	•					
BEOGRAM CD PLAYERS						
CD 3300	•(special datalink code for BM 3300 only)					
CD 4500	•					
CD 5500/6500	•					
MASTER CONTROL LINK						
MCL 2A						•
MCL 2AV	•		•	•	•	•
BEOLAB POWERED LOUDSPEAKERS						
BL PENTA 1					•	
BL PENTA 2				•	•	
BL 3000/5000 (panel)					•	•
ALL BEOVOX LOUDSPEAKERS					•	
MX 5000 TV		•	•		•	•(2pin only)
VX 5000 VCR		•				

CABLE DIAGRAMS

All wiring diagrams to plugs and sockets are shown from the soldering side.

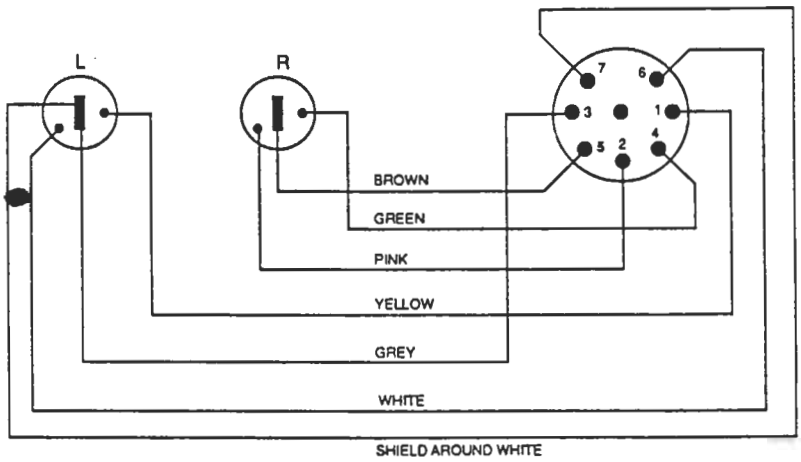
MCL cable from audio system to terminal strip in MCL 2 relay box. NOTE: Use premade MCL cables for connection to the audio system whenever possible. 5 premade lengths available for this application-see section 9.



green	= right channel hot
brown	= right channel ground
pink	= DC supply 7.5-8.5vdc
yellow	= left channel hot
grey	= left channel ground
white	= data
shield	= data and dc ground

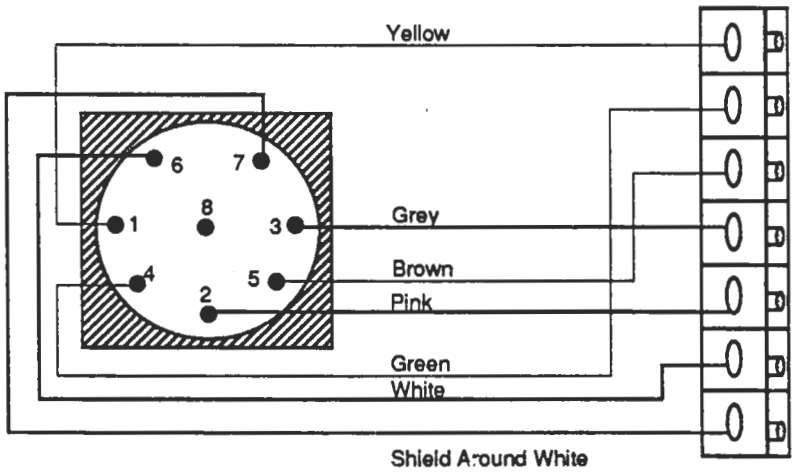
7-2

MCL cable, 2 x 3 pin MCL to 8 pin DIN plug. For connection between audio system and link system via 8 pin wall plate. Use premade MCL cables for connection to the audio system whenever possible. NOTE: 3 premade lengths available for this application-see section 9.



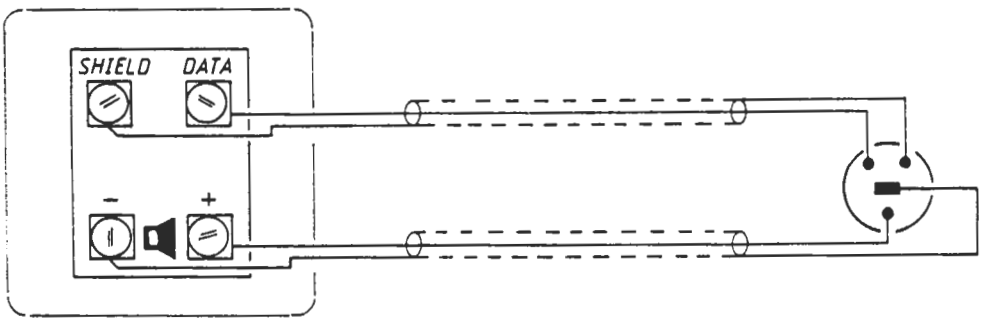
green	= right channel hot
grey	= left channel ground
white	= data
shield	= data and dc ground
brown	= right channel ground
pink	= DC supply 7.5-8.5vdc
yellow	= left channel hot

MCL cable between 8 pin DIN wall plate and MCL terminal strip. For connection between audio system and link system via 8 pin wall plate.



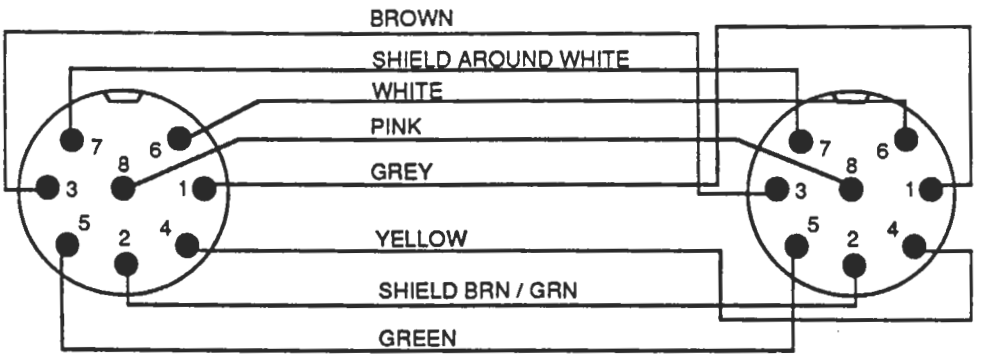
green	= right channel hot
brown	= right channel ground
pink	= DC supply 7.5-8.5vdc
yellow	= left channel hot
grey	= left channel ground
white	= data
shield	= data and dc ground

Speaker link cable from audio system or MCL to 4 pin DIN wall plate using speaker plug no.7220040. Use unterminated speaker link cable no. 6250246 or 6250267.



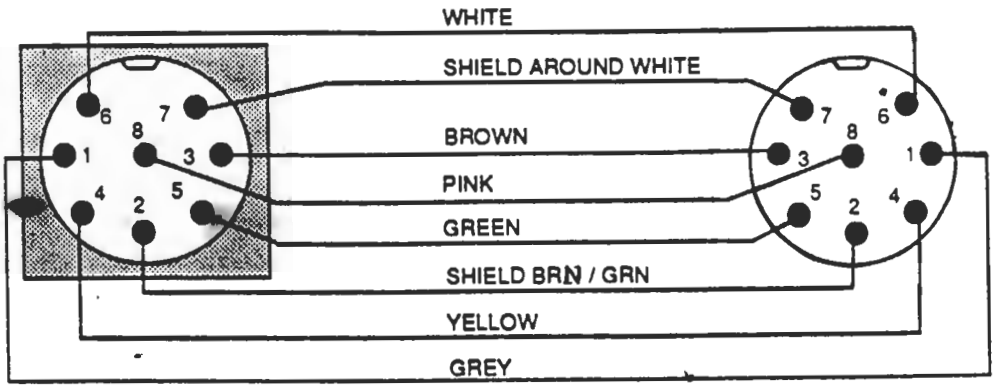
green or brown	= signal hot
shield	= signal ground
white	= display data
shield	= data ground

Power Link cable, male to male, using unterminated cable no. 6250277 and plug no. 7220345. Maximum length: 300 ft.



brown	= left audio signal
green	= right audio signal
shield: brn/grn	= left/right ground
grey	= on/off
yellow	= on/off
pink	= APHC
white	= data
shield: white	= data ground

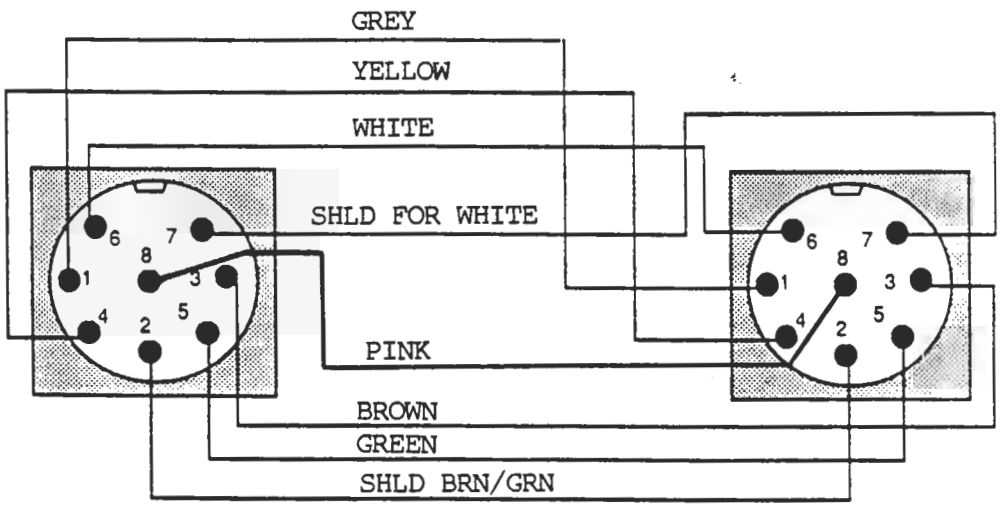
Power Link cable, male to female (extension) using unterminated cable no. 6250277, male 8 pin plug no.7220345, and female 8 pin plug no. 7220235 or 8 pin DIN wall plate no. 7210473. Maximum length, component to component: 300 ft.



brown	= left audio signal
green	= right audio signal
shield: brn/grn	= left/right ground
grey	= on/off
yellow	= on/off
pink	= APHC
white	= data
shield: white	= data ground

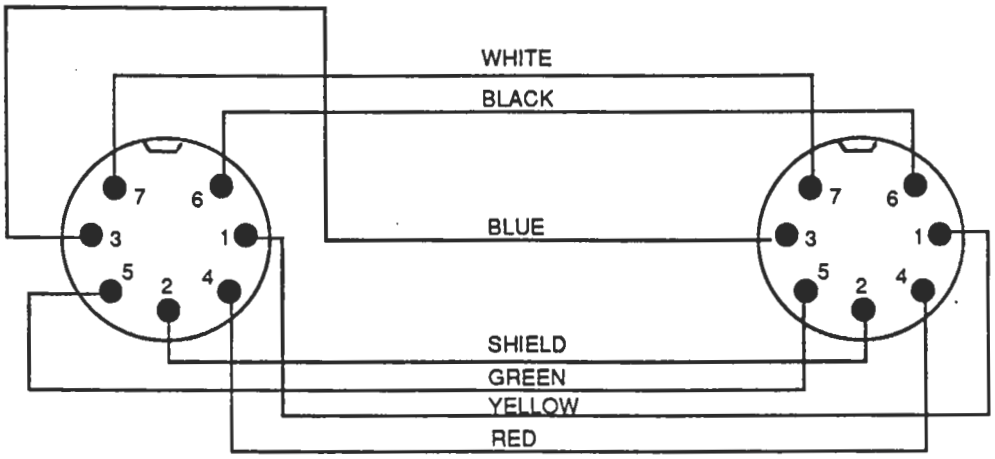
Remote Conn.
= 2 & 4
Alway

Power Link cable, female to female, using unterminated cable no. 6250277, and two female 8 pin DIN plugs no. 7220235 or two 8 pin DIN wall plates, no. 7210473



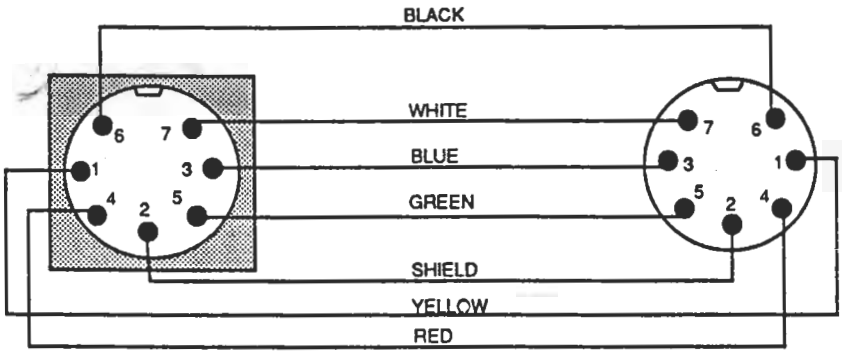
brown	= left audio signal
green	= right audio signal
shield: brn/grn	= left/right ground
grey	= on/off
yellow	= on/off
pink	= APHC
white	= data
shield: white	= data ground

Aux Link cable, male to male, using unterminated cable no. 6250265 and plug no. 7220688 or 7220701. For connection between video system and audio system. Maximum length 100 ft. NOTE: 4 premade lengths available for this application-see section 9.



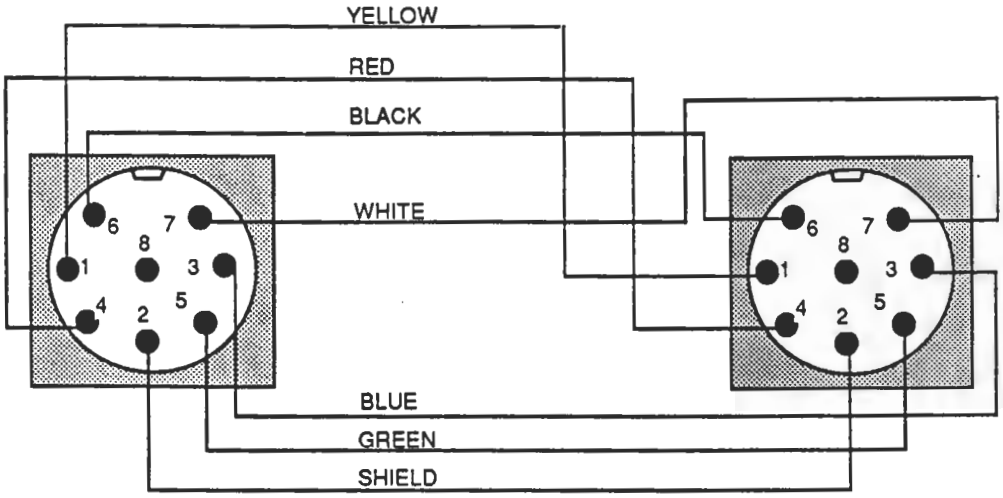
	Audio System	Video system
white	= data	= data
blue	= left channel input	= left channel output
green	= right channel input	= right channel output
shield	= ground	= ground
red	= right channel output	= right channel input
yellow	= left channel output	= left channel input
black	= data ground	= data ground

Aux Link cable, male plug to wall plate, using unterminated cable no. 6250265. Use male plug, no. 7220688 or 7220701, and 8 pin wall plate no. 7210473. Used for connecting local sources when MCL 2AV is concealed.

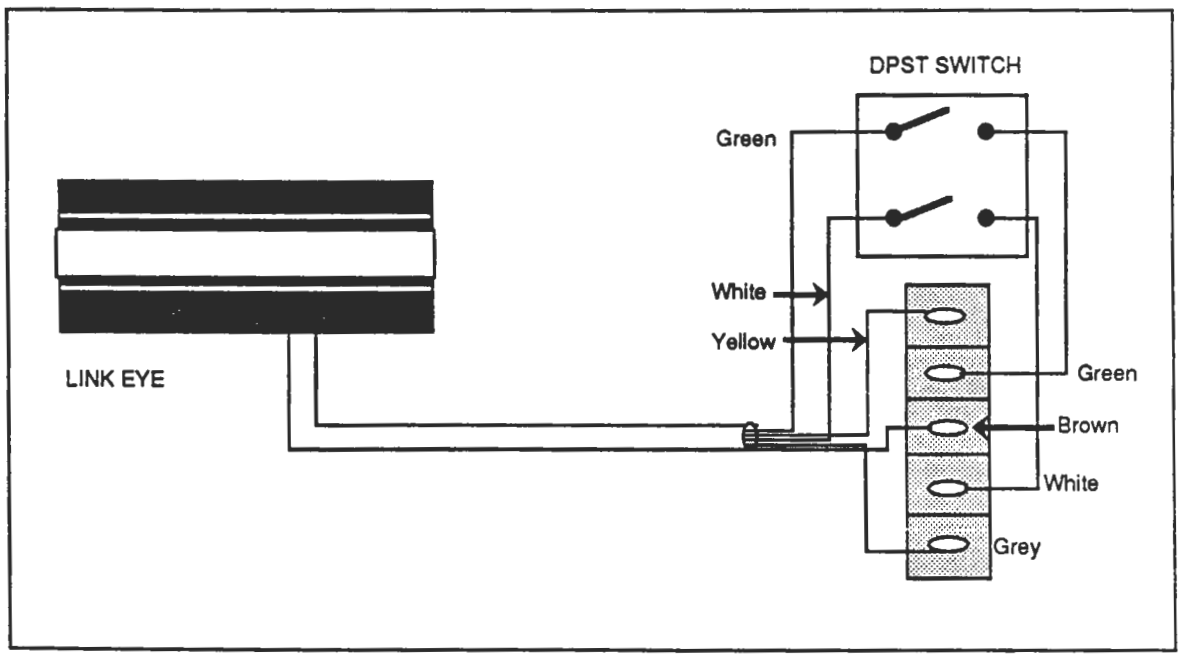


white	= data
blue	= left channel input
green	= right channel input
shield	= ground
red	= right channel output
yellow	= left channel output
black	= data ground

Aux Link cable, wall plate to wall plate, using unterminated cable no. 6250265. and 2 - 8 pin wall plates no. 7210473. Used for connection between audio and video systems with in the wall wiring.



	Audio System	Video system
white	= data	= data
blue	= left channel input	= left channel output
green	= right channel input	= right channel output
shield	= ground	= ground
red	= right channel output	= right channel input
yellow	= left channel output	= left channel input
black	= data ground	= data ground



Switch for deactivation of MCL transceiver when temperature falls below 32 degrees. Double pole, single throw switch inserted between white wire, green wire, and terminal strip in relay box.

IMPORTANT! Before troubleshooting the MCL system, verify that the following set-up guidelines have not been exceeded.

1. Up to four links and 500 ft. of MCL cable may be used without additional accessories.

2. If more than 4 links or more than 500 ft. of cable is used, an MCL 2E expander must be installed. See section 2.

3. Make sure the transceivers are installed in such a way the the remote terminal can only "see" one transceiver at a time.

4. Verify on transceivers with additional cable that the length of the cable does not exceed a total of 32 ft.

5. Transceivers should not be placed near sources of strong radio frequency or infrared interference (light dimmers, infrared alarms, direct sunlight, etc.)

6. Transceivers installed outdoors must be mounted in a moisture resistant box (7210611 or equivalent). If outdoor temparature falls below 32 degrees, a transceiver cutout switch should be installed. See section 6

7. MCL relay boxes should not be installed in areas where the ambient temperature goes below 32 degrees or above 150 degrees Fahrenheit.

Precautions to observe during troubleshooting

1. During troubleshooting, it may be necessary to temporarily disconnect wires to take voltage measurements while the power to the main room system is still connected. Remember that simply reconnecting the wires afterward may result in a data "lockup" rendering the system inoperable in the local rooms. Before going on, try resetting the system by disconnecting the AC mains from the main room components and all AC powered MCL components (MCL 2AV, MCL 2P, MCL 2E). Then reconnect the AC, first to the MCL components, and finally to the main room system.

2. The display on the Beolab® Penta/Panel speakers may not function after troubleshooting the system. Before proceeding further, disconnect the Beolab speakers from the AC mains, while the main room audio system is in STANDBY mode. Then reconnect the Beolab speaker.

3. Never cut MCL or transceiver cables unless the entire MCL system is powered down. This includes all AC powered MCL components and the main room audio system. Remember that power is supplied to the MCL system even when the main room system is in STANDBY mode.

<u>One MCL 2A does not work: The LED's on the transceiver do not light up</u>

Is the link receiving power?

Measure the voltage between the pink wire and the shield of the 7 conductor MCL cable at the terminal strip in the relay box. It should measure between 7 and 8.5 volts d.c. If it is low, disconnect the pink wire from the terminal block and measure the voltage between the pink wire and the shield. It it returns to normal, the relay box is defective. If it stays low, there is a short or bad connection on the MCL cable.

Is the transceiver receiving power?

Measure the voltage between the green and brown transceiver wires at the terminal block in the relay box. It should normally read between 4.7 and 5 volts d.c. If it is low, disconnect the green wire from the terminal block and measure the voltage between the green and brown wire connections <u>on the terminal block.</u> If the voltage is still low or not present the relay box is defective. If the voltage returns to normal, the transceiver or transceiver wire is defective.

One MCL 2A does not work: The LED's on the transceiver operate and the speakers mute when the button is pressed on the Beolink terminal or the transceiver itself but the main system cannot be controlled:

Is the data line voltage correct?

Measure the voltage between the white wire and the shield at the 7 conductor terminal block in the relay box. It should normally measure between 4.5 and 5 volts dc. If the voltage is low disconnect the white wire from the 7 conductor terminal block and measure the voltage at the white wire. If the voltage stays low there is a short circuit, open circuit, or bad connection in the MCL cable.

If the voltage increases to the correct level, reconnect the white wire to the 7 conductor terminal block. While measuring the voltage between white and shield on the 7 conductor terminal block, disconnect the white transceiver wire from the 5 conductor terminal block. If the voltage increases, the transceiver or its connecting cable is defective. If the voltage stays the same, the transceiver is ok.

If Beolab Panel/Penta speakers are connected, disconnect them one at a time from the relay box while continuing to measure the voltage as outlined in the previous step. If the voltage does not increase after disconnecting both speakers, the relay box is defective. If the voltage increases, one of the Beolab speaker displays, or the connecting cable to the speaker is defective

One MCL 2AV does not work: The LED's on the transceiver do not light up

Is the link receiving power?

Whether pre-programmed as an MCL 2A or MCL 2AV, MCL 2AV requires power from an outside source. An ac adaptor is supplied for this purpose. Check the adaptor by measuring the voltage at its dc plug. The voltage should measure between 15 and 20 volts dc. Alternately, when an MCL 2P is used, the MCL 2P supplies 15 volts for the MCL 2AV via a supplied dc cable. Measure the voltage on the cable. It should be approx. 15 volts dc.

Is the transceiver receiving power?

Measure the voltage between the green and brown transceiver wires at the terminal block in the relay box. It should normally read between 4.7 and 5 volts d.c. If it is low, disconnect the green wire from the terminal block and measure the voltage between the green and brown wire connections on the terminal block. If the voltage is still low or not present the relay box is defective. If the voltage returns to normal, the transceiver or transceiver wire is defective.

One MCL 2AV does not work: The LED's on the transceiver operate and the main system can be accessed, but no sound comes from the speakers.

Has the MCL 2AV been pre-progammed?

When used in MCL 2A mode, with speakers plugged into the speaker sockets of the MCL 2AV, the MCL 2AV must be programmed into the "reset" mode. This can only be done with the main system and all MCL 2AV units in STANDBY mode. While holding down the TIMER button on the transceiver press the RESET button on a Beolink 1000 terminal. The STANDBY LED on the transceiver should blink, acknowledging that the command was received.

When used in MCL 2AV mode, with powered speakers or MCL 2P plugged into the Power Link sockets, the MCL 2AV must be programmed into the "AV" mode. This can only be done with the main system and all MCL 2AV units in STANDBY mode. While holding down the TIMER button on the transceiver press the AV button on a Beolink 1000 terminal. The STANDBY LED on the transceiver should blink, acknowledging that the command was received.

Has the MCL 2AV been programmed to the correct option?

When used in MCL 2AV mode, with powered speakers or MCL 2P plugged into the Power Link sockets, the MCL 2AV must be programmed for the correct option. This can only be done with the main system and all MCL 2AV units in STANDBY mode.

In cases where MCL 2AV is used as an audio only Link (with or without local sources), the MCL 2AV must be programmed in Option 2. Note: The MCL 2AV is programmed at the factory in Option 2 mode. For situations where a MX 5000 tv has been installed in a Link room with MCL 2AV, consult section 5 for the proper option programming.

Option programming is accomplished with the main room system and all MCL's in STANDBY mode. Press the following buttons on the Beolink 1000 terminal: LINK, the appropriate option number, STORE. The LED in the right side of the MCL transceiver will blink, indicating that the command has been received.

Is the correct transceiver being used with the MCL 2AV?

Only transceivers with type number 2021 may be used. Please note that older MCL 2A transceivers with type number 2045 look identical and have identical wire color codes to the type 2021.

MCL 2A and MCL 2AV: The entire Link system does not operate.

Is the remote terminal defective?

Try the remote unit in the main room to confirm that it is operating properly. Replace batteries and retest.

Is the main audio system fitted with Beolink software?

For proper operation of a system using MCL 2AV it is essential that Beolink software be used. Beolink software is present in the system when a sticker with the word "Beolink" is present on the back of the Beomaster or Beocenter, near the socket panel.

Is the MCL cable correctly connected?

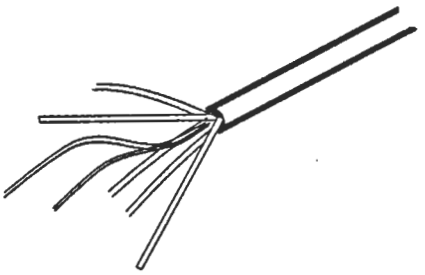
Verify that the 3 pin speaker plugs are plugged into the Speaker 2 outputs of the Beomaster or Beocenter and that the left and right channel plugs are in the correct sockets. If they are reversed the system will not operate.

If a premade MCL cable has not been used, verify that the plugs have no shorts or opens, and that the wires have been soldered to the correct pins. See the connection diagrams in section 7.

Is the Beosystem functioning properly?

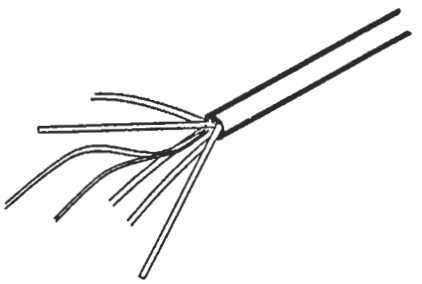
In the vast majority of cases, if the Beosystem is functioning properly in the main room, its Link interface funtions will also be functioning properly. However, this may be easily verified with the following test:

Plug a **new** premade MCL cable to the speaker 2 sockets. Make sure the bare ends do not short together. Connect the negative terminal of a VOM to the shield (for the white wire). Measure the voltage on the pink wire. It should read between 7 and 8.5 volts dc. Measure the voltage on the white wire. It should read between 4 and 5 volts dc. If both voltages are correct the Beosystem to Link interface is ok.



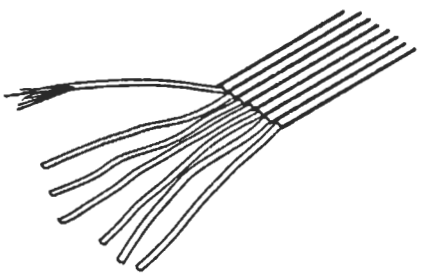
6250113

MCL CABLE
Round cable, 7 conductors plastic jacket. Conforms to NEC/UL codes for CL 2 wiring .
For connection between 2 Link units or Link unit and terminal strips.
Supplied in rolls of 500 ft.



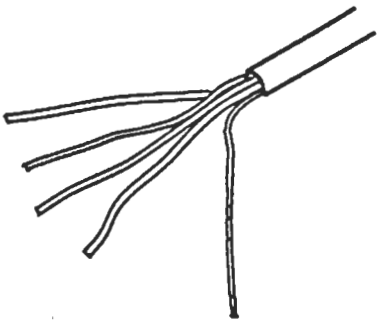
9625000

MCL CABLE
Round cable, 7 conductors teflon jacket. Conforms to NEC/UL codes for plenum and high temperature applications
For connection between 2 Link units or Link unit and terminal strips.
Supplied in rolls of 164 ft.



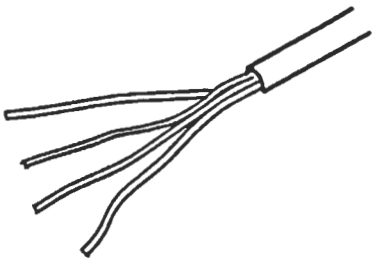
6200130

MCL CABLE
Flat cable, 7 conductors plastic jacket.
For connection between 2 Link units or Link unit and terminal strip.
Used for wiring under carpets, etc.
Supplied in rolls of 325 ft.



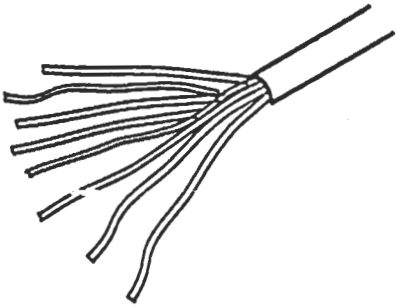
6100154

TRANSCEIVER CABLE
Round Cable, 5 conductors plastic jacket.
For extension of MCL 2ABLI or MCL 2AV transceiver.
NOTE: total transceiver cable length should not exceed 32'
Supplied by the meter.



6250235

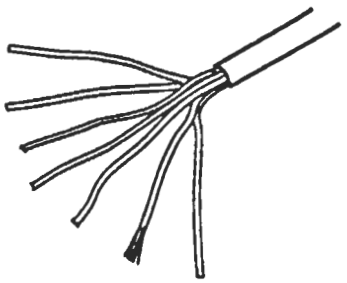
EXTERNAL IR SENSOR CABLE
(BEOMASTER 5500 ONLY)
Round cable, 3 conductors, 2 shields.
For extending cable length of 8920010 IR sensor.
NOTE: Maximum cable length should not exceed 32'
Supplied by the meter.



6250277

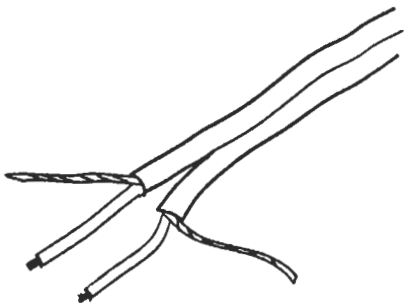
Power Link Cable.
Round, 8 conductors, plastic jacket.
For connection from MCL 2AV to MCL 2P, Powered speakers, or 8 pin DIN wall plates.
NOTE: Maximum cable length should not exceed 300'
Supplied in rolls of 325'.

6250265



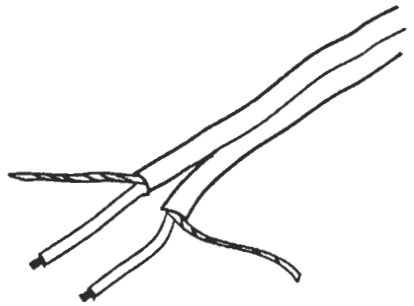
Audio Aux Link Cable. Round, 7 conductors, plastic jacket.
For A/V connection between Beovision TV and Beomaster/Beocenter.
For extension of local source inputs when MCL 2AV is concealed.
NOTE: Maximum length should not exceed 100'
Supplied by the meter.

6250267

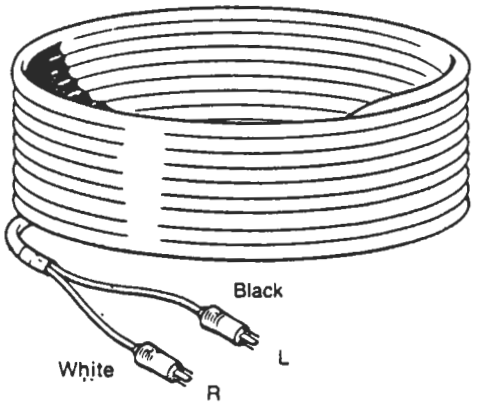


Speaker Link Cable. 2 conductors, 2 shields. 24 gauge.
For connection between Beomaster/Beocenter or MCL 2ABLI and Beolab Penta/Panel speaker via 4 pin speaker outputs.
NOTE: Not designed for power link connections. Max length should not exceed 100'

6250246

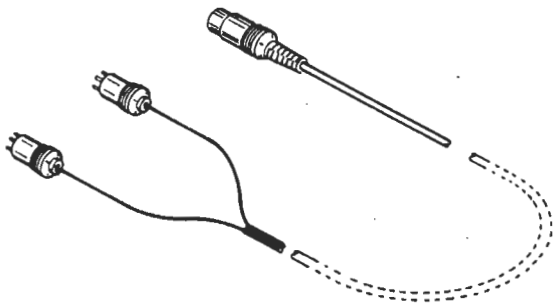


Speaker Link Cable. 2 conductors, 2 shields. 18 gauge.
For connection between Beomaster/Beocenter or MCL 2ABLI and Beolab Penta/Panel speaker via 4 pin speaker outputs. May also be used for passive loudspeakers.
NOTE: Not designed for power link connections. Max length should not exceed 100'



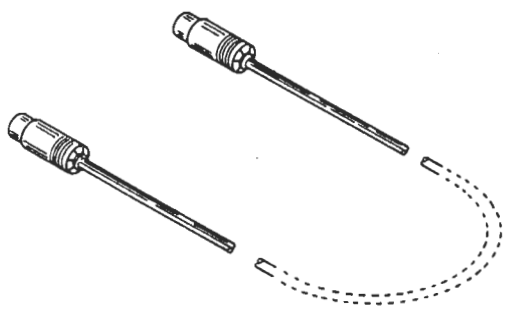
6270266 5 ft.
6270267 16 ft.
6270268 32 ft.
6270269 48 ft.
6270270 65 ft.
6270271 96 ft.

MCL Cable Round, 7 conductors, plastic jacket with 2 x 3 pin DIN speaker plugs on one end. Other end is unterminated.
For connection between Beomaster/Beocenter speaker 2 output and MCL #1 or junction box.



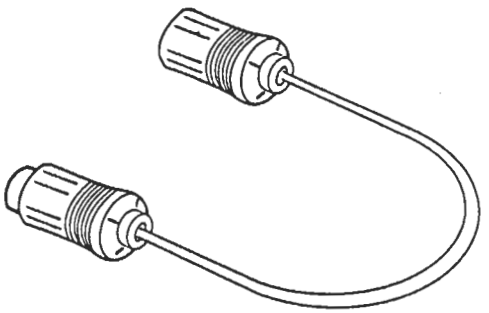
6270298 3 ft.
6270295 10 ft.

MCL Cable Round, 7 conductors, plastic jacket with 2 x 3 pin DIN speaker plugs on one end and 8 pin DIN plug on the other end.
For connection between Beomaster/Beocenter speaker 2 output and 8 pin DIN wall plate.



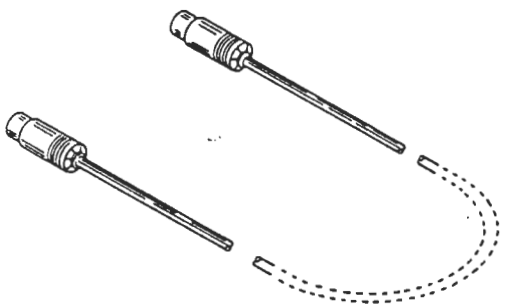
6270222 5 ft.
6270353 16 ft.
6270337 32 ft.
6270354 65 ft.

Audio Cable with 7 pin DIN male plug on both ends.
For connection between Beomaster/Beocenter and Beovision TV.
Also for connection between Beomaster and Beocord without attached 7 pin cables



6270338

Audio extension cable with 7 pin male DIN plug on one end and 7 pin DIN female plug on the other end.
Length: 5 ft.
Extends captive cables on Beocord, Beogram CD, and Beogram 4500*.
Extends any product* or cable with 7 pin male or female connection.
*NOTE: If used with other Beogram turntables, a separate ground wire must be added between chassis of the Beogram and chassis of the Beomaster.



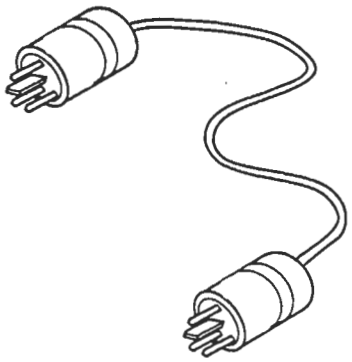
6270417 8 ft.
6270418 16 ft.
6270419 32 ft.

Power Link cable with 8 pin DIN male plug on both ends.
For connection between MCL 2AV Power Link outputs and MCL 2P or Beolab Penta 2/Panel loudspeakers.
Also for connection between Beomaster or 8 pin DIN wall plate with Power Link outputs and Beolab Penta 2/Panel loudspeakers.

6270505 5 ft.
6270508 16 ft.
6270506 45 ft.

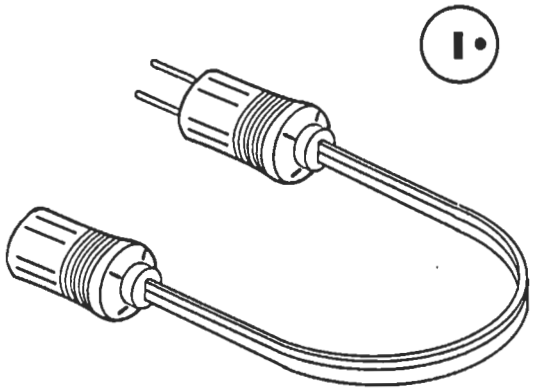
AV Cable Round, 21 conductors, plastic jacket with 2 x 21 pin plugs
For connection between Beovision MX 5000 and Beocord VX 5000.

6270336 12 ft.
6270352 30 ft.



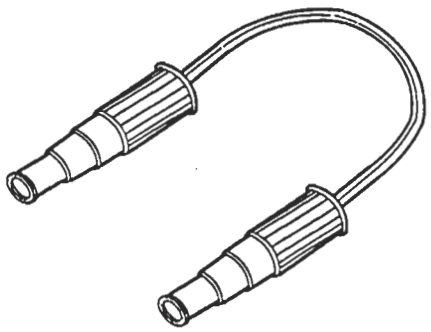
Speaker Link cable, shielded with 4-pin DIN speaker plugs on each end.
For connection between Beomaster/Beocenter Speaker 1 outputs and Beolab Penta/Panel loudspeakers.
Also for connection between MCL 2A/2AV speaker outputs or 4 pin wall plates and Beolab Penta/Panel loudspeakers.

6270178 12 ft.
6270181 30 ft.

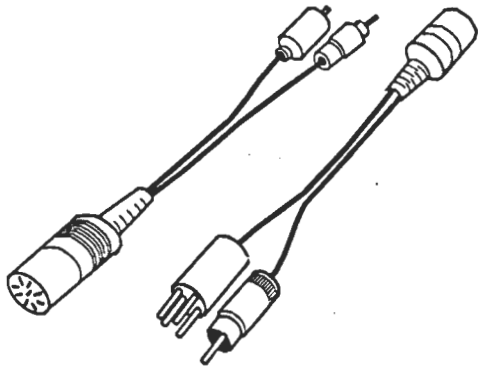


Speaker cable, male to female,18 gauge unshielded with 2-pin DIN speaker plugs on each end.
For connection between Beomaster/Beocenter Speaker 1 outputs and Beovox loudspeakers.
Also for connection between MCL 2A/2AV speaker outputs and Beovox loudspeakers.
NOTE: Not for use with Beolab Penta or Panel loudspeakers

6270420

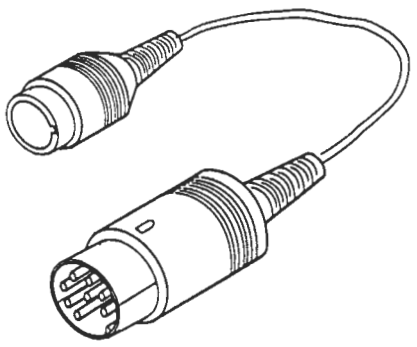


DC Cable with male DC plugs on each end.
Length: 8 ft.
For DC connection between MCL 2AV and MCL 2P



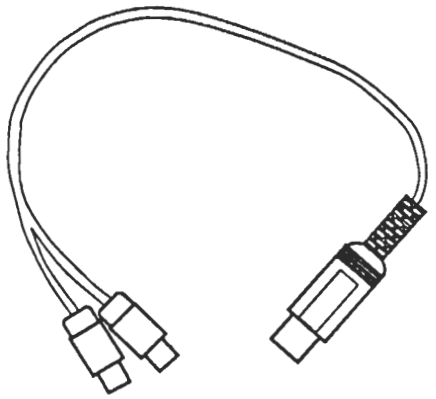
6275896

Power Link to Penta adaptor.
Supplied in pairs, one for right channel, one for left channel. Adapts Beolab Penta 1 (type 6603) to Power Link connections from MCL 2AV. Plugs into bottom of Beolab Penta.
NOTE: For Beolab Penta type 6603 only.



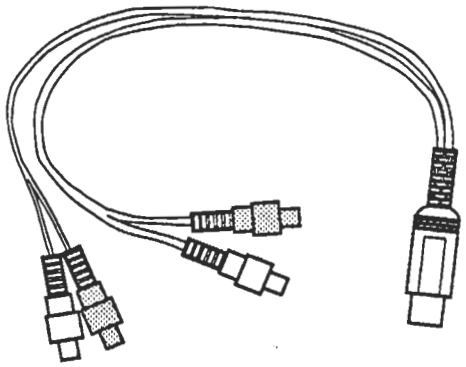
6270517

Power Link to Remote Mains Switch adaptor. 8 pin DIN male plug to DC female plug. Allows the remote mains switch (8940010) to be operated by MCL 2AV or by any product with Power Link outputs.



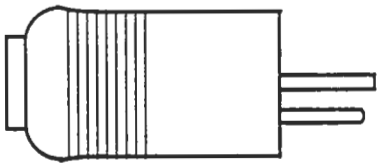
6270316

DIN to RCA adaptor. 5-pin DIN male-two RCA female .
Adapts Power Link outputs of MCL 2AV or any Bang & Olufsen product for use with non B & O power amplifiers.
Adapts Phono and Auxiliary inputs on Beomaster/Beocenter for use with non B & O turntables or CD players
Adapts CD input of MCL 2AV for use with non B & O local audio sources.



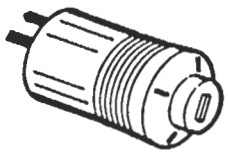
6271113

DIN to RCA Record/Playback adaptor.
5-pin DIN male-four RCA female.
Adapts non B & O tape decks with RCA inputs/outputs to Tape sockets of MCL 2AV and Beomaster/Beocenter.
NOTE: Can also be used as a substitute for 6270316 adaptor.



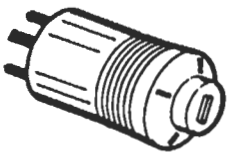
7220027

Speaker plug 2-pin male, with screw terminals. Used for connection of standard loudspeaker cables to Beomaster/Beocenter or to MCL 2A/2AV



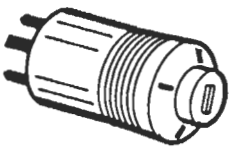
7211032 solder terminals
7210502 screw terminals

Speaker plug, 2-pin female. Used for connection of Beovox loudspeakers without spring terminals to standard speaker cables.
Also used for custom speaker extension cables.



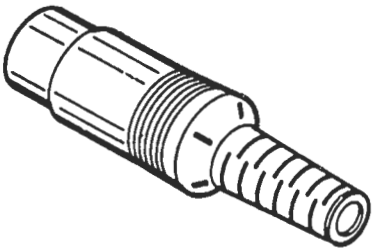
7220288

Speaker plug, 3-pin male, with solder terminals. Used for connection of link wire to Beomaster/Beocenter speaker 2 outputs.
NOTE: Whenever possible, use pre-made link cables.



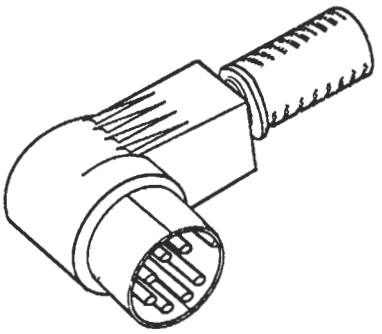
7220440

Speaker plug, 4-pin male,with solder terminals. Used for connection of Beomaster/Beocenter speaker 1 output or MCL 2A/2AV speaker output to unterminated Speaker link (shielded Penta) cables.



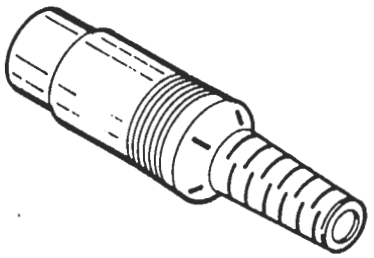
7220163

Aux Link plug, 7-pin DIN male, with solder terminals. Used for constructing custom length audio cables for connection between TV and audio system, or connection between local sources and MCL 2AV.
NOTE: See diagram in section 7 for color codes.



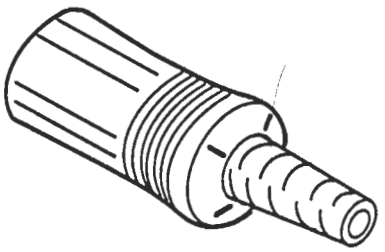
7220701

Aux Link plug, Right angle 7-pin DIN male, with solder terminals. Used for constructing custom length audio cables for connection between TV and audio system, or connection between local sources and MCL 2AV. Useful in installations where plug depth is critical.
NOTE: See diagram in section 7 for color codes.



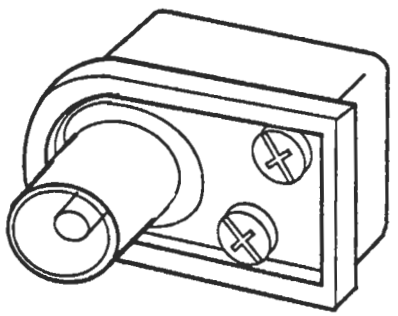
7220345

Power Link plug, 8-pin DIN male, with solder terminals. Used for constructing custom length Power Link cables.
NOTE: See diagram in section 7 for color codes.



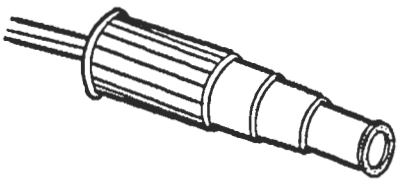
7220235

Power Link plug, 8-pin DIN female, with solder terminals. Used for constructing custom length Power Link extension cables.
Also may be used for 6 pin and 7 pin extension cables
NOTE: See diagram in section 7 for color codes.



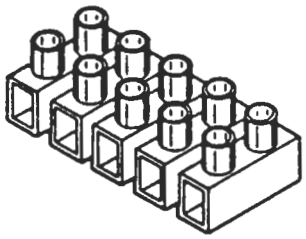
7220249

Coaxial Antenna plug, right angle with screw terminals. For connection of 75Ω coaxial cable to Beomaster/Beocenter or to antenna output of MCL 2AV



7221026

DC plug with solder terminals.
For construction of custom length DC power supply cables for MCL 2AV or MCL 2E expander.
NOTE: 18 gauge wire recommended.



7505029

5 conductor terminal strip with screw terminals. Used as a convenient junction point for extension of 5 conductor transceiver wire

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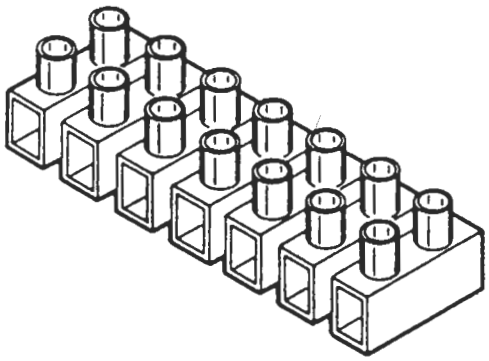
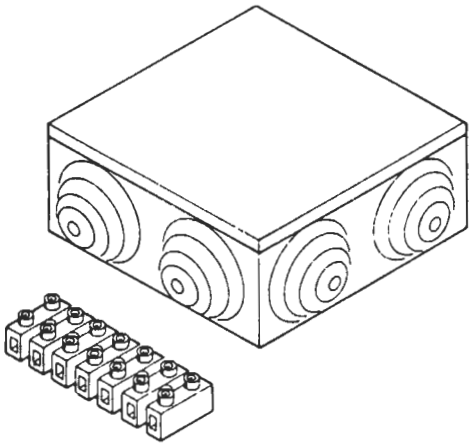


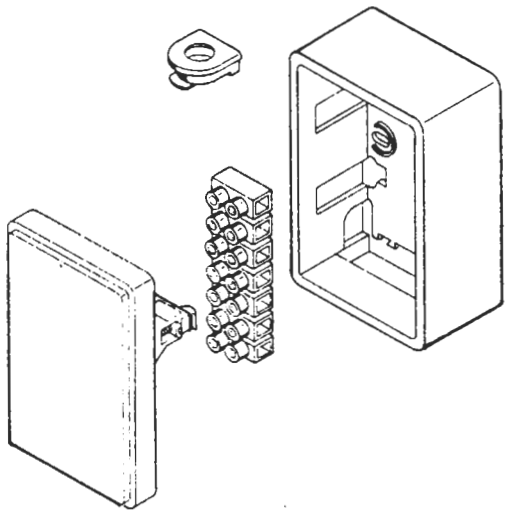
7505017

7 conductor terminal strip with screw terminals. Used as a convenient junction point for 7 conductor Master Control Link or audio Aux Link cables.



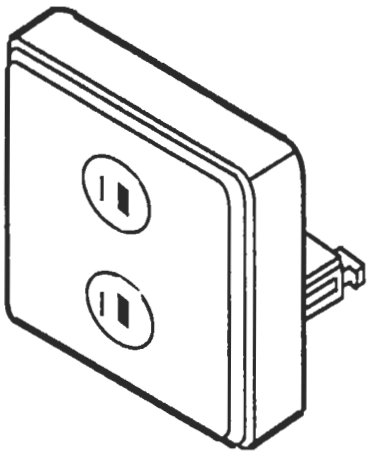
3152431

Junction box with 7 conductor terminal strip.
Provides a convenient distribution point from main audio system to Link room systems.



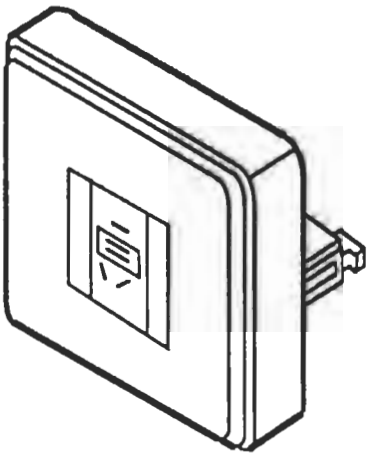
7219058

Junction box with 7 conductor terminal strip.
Used as a junction
point for conversion from round to flat MCL cable.



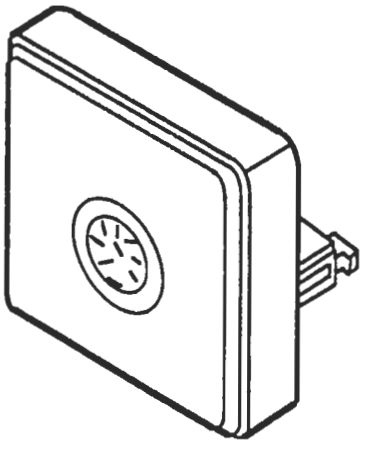
7210472

Wall plate with 2 x 2 pin DIN speaker sockets. Screw terminals. For connecting passive loudspeakers to MCL 2A/2AV when Link box is concealed.



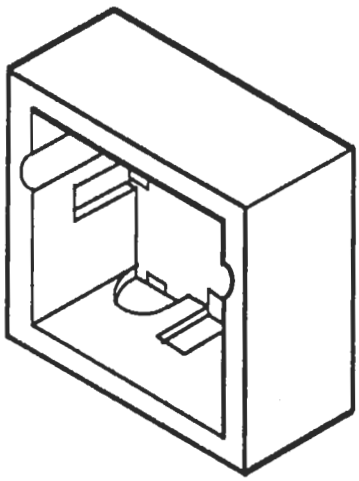
7210604

Wall plate with 4 pin DIN speaker socket. Screw terminals on back. For connecting Beolab Penta or Panel speakers to MCL 2A when Link box is concealed.
NOTE: Not for connecting Beolab speakers to MCL 2AV. (Use 7210473) May also be used as a single speaker socket wall plate for passive speakers.



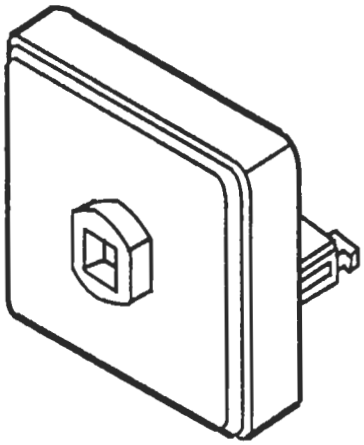
7210473

Wall plate with 8 pin DIN socket. Solder terminals on back.
Used when MCL system is concealed.
1. For Power Link connection to Beolab Penta/Panel speakers.
2. For connection between main room audio system and link system.
3. For connection between local audio sources in link room and MCL 2AV
NOTE: Refer to section 7 for connection diagrams and color codes.



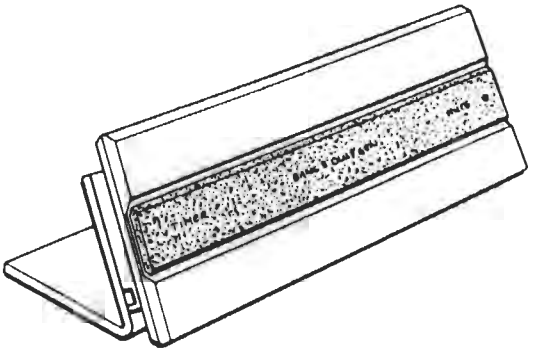
7210474

Mounting base for wall plates.
Used for surface mounting wall plates on solid walls.



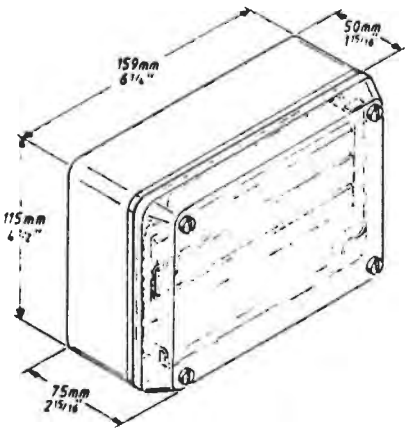
7219051

Wall plate for cable entry.
Provides a decorative means of running cables from outside to inside of partition walls. Also provides strain relief. For round MCL and transceiver cables.



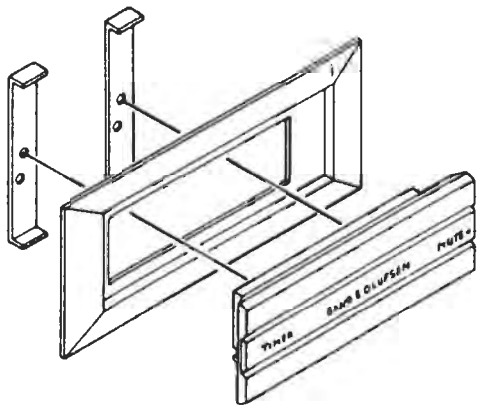
7219060

Table top transceiver mount. For MCL 2A or MCL 2AV transceivers. Also for Beomaster 5500 external infrared sensor.
Allows placement of the transceiver on a table or shelf.



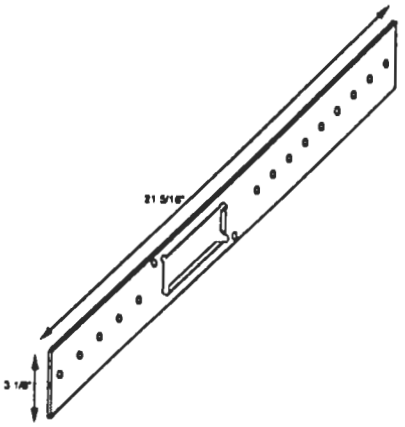
7210611

Outdoor mounting box for MCL 2A/2AV transceiver.
Note: If outdoor temperature falls below 32 degrees, it will be necessary to install a switch to disable the transceiver. See section 7



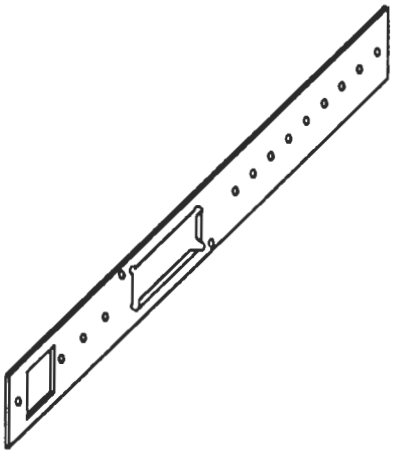
7219067

Convertor plate for transceiver.
For MCL 2A only.
Black color, supplied with brackets.
Allows larger wall cutout (5.7" x 2.2") for drop-through of MCL 2A relay box.
Also converts hole originally cut for MCL 82 or MCL 30 for mounting of MCL 2A transceiver.
NOTE: MCL 2AV relay box cannot be dropped through wall.



3124110

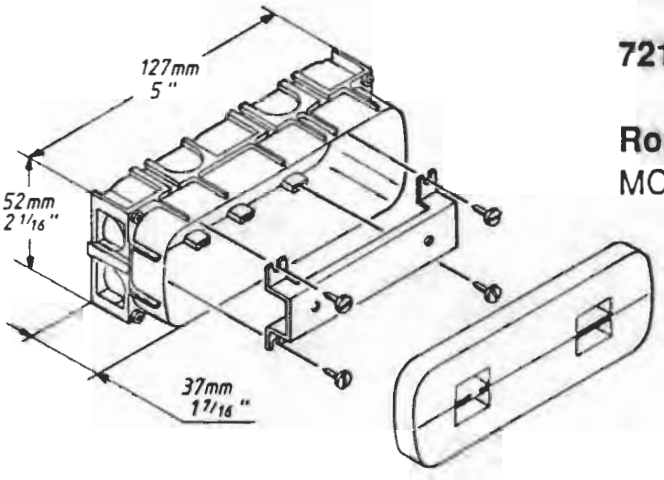
Rough-in plate for MCL 2A/2AV transceiver. Ensures proper transceiver placement and opening size during pre construction. NOTE:This rough-in plate does not allow drop-through of MCL 2A relay box.



9312000

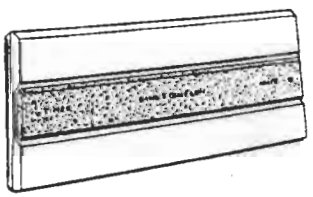
Rough-in plate with large cutout for MCL 2A transceiver. Opening size allows the MCL 2A relay box to be dropped into the wall for convenient installation.

NOTE: Not for MCL 2AV. Convertor plate 7219067 will be required for mounting of MCL 2A transceiver.



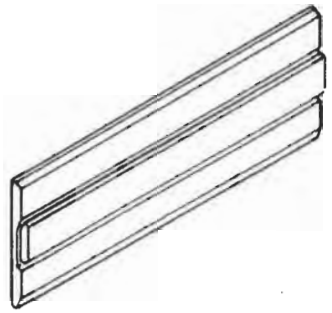
7219061

Rough-in box for solid walls. For MCL 2A/2AV transceivers.



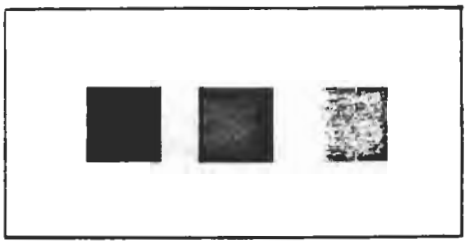
3164670

Cover plate for 7219061 rough-in box



3164683

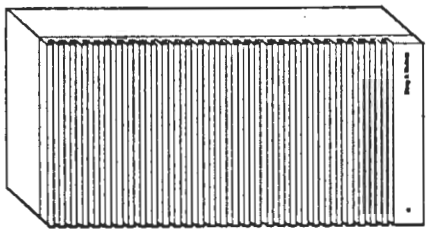
Decorative blind plate for transceiver cutout. For MCL 2A/2AV. Conceals transceiver opening for future installation, or in the event the transceiver is removed.



3370162

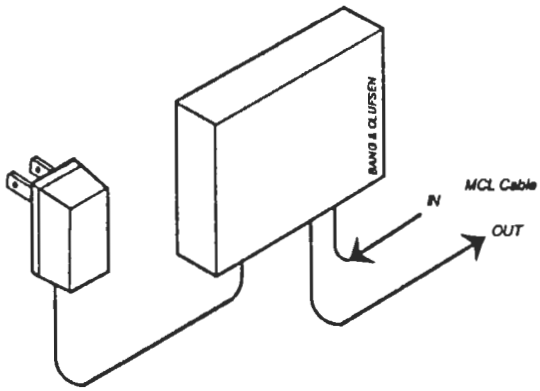
Infrared filter for MCL 2A/2AV.
For reduction of transceiver reception sensitivity.
To be installed in the transceiver when undesired activation of the MCL occurs because of close proximity to another transceiver.
Supplied in three shades.

Range reduction with filters:
light: approx 30%
medium: approx 50%
dark: approx 70%



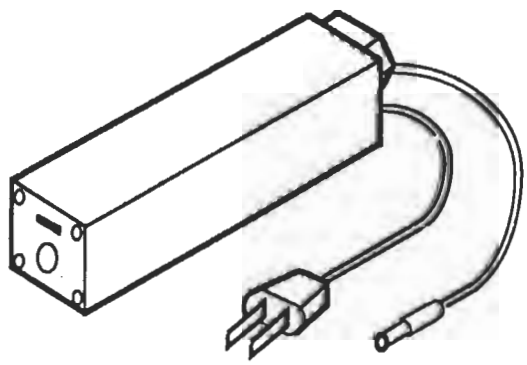
MCL 2P

Power amplifier, 2 x 30 watts RMS
For use with MCL 2AV when passive loudspeakers are used in Link rooms.
Features auto turn-on and Automatic Power Handling Control circuitry.
May also be connected to any Bang & Olufsen product with Power Link output sockets.



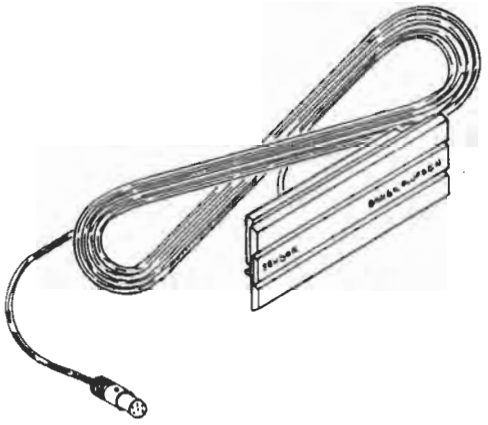
8920080

MCL 2E Expander. For MCL 2A/2AV. Must be used when installation contains more than 4 links or 500 feet of MCL cable. Expands system capacity to 16 links and 2000 feet of cable. Provides additional current to Link units and amplifies data to and from the audio system.



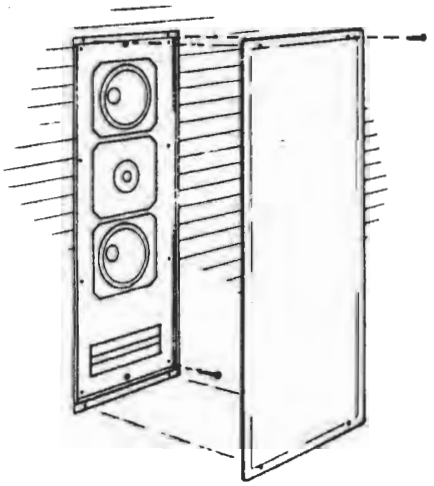
8940010

Remote Mains Switch. Provides a 1500 watt mains outlet which switches on whenever the product to which it is connected is switched on. For connection of extra power amplifiers and signal processors. Supplied with adaptor for operation with Beomaster 5500.
NOTE: If used with Beosystem 4500 or MCL 2AV, adaptor (no. 9627100) is required



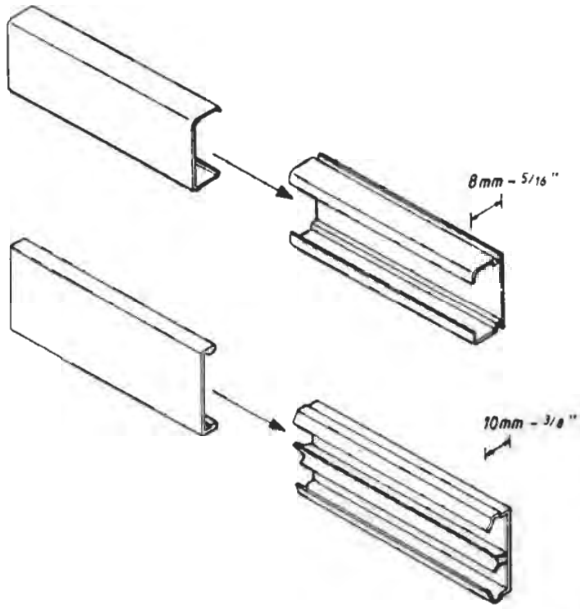
8920010

Infrared Sensor for Beomaster 5500 only. Used when the Beosystem 5500 is positioned in a cabinet or around a corner. Connects to the Beomaster 5500 via an attached 16 foot cable and a 6- pin DIN plug. Length may be extended to a max of 32 feet using sensor cable (no. 6250235)



IWS 100

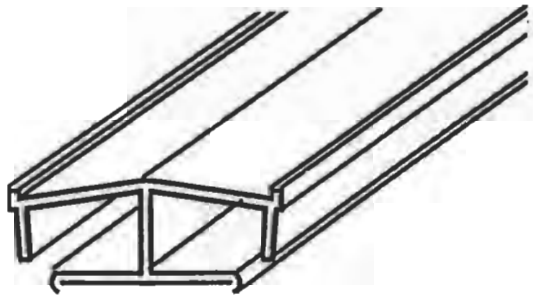
Loudspeaker for flush mounting in the wall.
Designed to house the MCL 2A transceiver and relay box to provide a highly concealed in the wall Link installation.
Will also house the MCL 2AV transceiver but not the MCL 2AV relay box.



2560202 (large)
2560232 (small)

White cable casing, large
1.8" wide x .4" deep.
Length per section: 6.5'
For concealing multiple cables.
Available by the section or in cartons of 25 sections each.

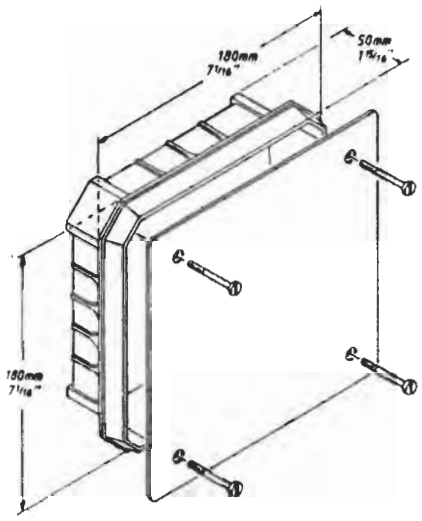
White cable casing, small
.8" wide x . 4" deep.
Length per section: 8'.
For concealing MCL, transceiver, and speaker cables.
Available by the section or in cartons of 20 sections each.



8960280 (BV/BL 5000)
8960290 (BV/BL 3000)

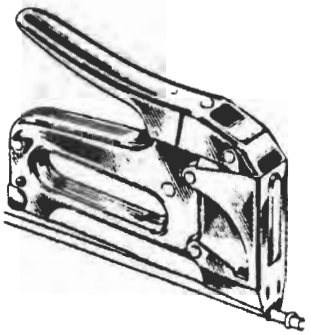
Decorative cable casing. Conceals mains cord and/or signal cables of Bang & Olufsen Beovox/Beolab Panel series loudspeakers, when wiring is run on wall surface. Beveled stainless steel surface matches steel panel on loudspeaker surfaces. Supplied in single units only. Two required per speaker pair.

Length: 8960280 - 33.5"
8960290 - 51"



7219064

Rough in box for MCL 2A relay box.



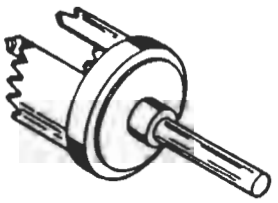
5mm 8mm

3629043 5 mm. Staple gun
3629044 8 mm. Staple gun

Staple gun For fastening of MCL cables to studs, baseboards, etc.

3629045 5mm staples
3629046 8mm staples

Package of 1000 staples



3629115

Hole Saw for European wall plates. 46 mm. hole size. For drilling through drywall or paneling.